TOWARDS YOUTH PARTICIPATION IN RESPONDING TO CLIMATE CHANGE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT IN THAILAND

Miss Joanne Narksompong

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ ที่ส่งผ่านทางบัณฑิตวิทยาลัย

The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository (CUIR)
are the thesis authors' files submitted through the University Graduate School.

A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy Program in Environment Development and Sustainability
(Interdisciplinary Program)
Graduate School
Chulalongkorn University
Academic Year 2015

Copyright of Chulalongkorn University

การมีส่วนร่วมของเยาวชนเพื่อตอบสนองต่อการเปลี่ยนแปลงสภาพภูมิอากาศ ในบริบทของการพัฒนาอย่างยั่งยืนของประเทศไทย

นางสาวโจแอน นาคสมพงษ์

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต
สาขาวิชาสิ่งแวดล้อม การพัฒนา และความยั่งยืน (สหสาขาวิชา)
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2558
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	TOWARDS YOUTH PARTICIPATION IN RESPONDING TO CLIMATE CHANGE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT IN THAILAND
By	Miss Joanne Narksompong
Field of Study	Environment Development and Sustainability
Thesis Advisor	Sangchan Limjirakan, D.Tech.Sc.

Accepted by the Graduate School, Chulalongkorn University in Partial Fulfillment of the Requirements for the Doctoral Degree

.....Dean of the Graduate School
(Associate Professor Sunait Chutintaranond, Ph.D.)

THESIS COMMITTEE

.....Chairman
(Assistant Professor Charit Tingsabadh, Ph.D.)

.....Thesis Advisor
(Sangchan Limjirakan, D.Tech.Sc.)

.....Examiner
(Narumon Arunotai, Ph.D.)

.....Examiner
(Kallaya Suntornvongsagul, Ph.D.)

.....External Examiner
(Associate Professor Sura Pattanakiat, Ph.D.)

.....External Examiner
(Associate Professor Kansri Boonpragob, Ph.D.)

โจแอน นาคสมพงษ์ : การมีส่วนร่วมของเยาวชนเพื่อตอบสนองต่อการเปลี่ยนแปลงสภาพภูมิอากาศในบริบทของการพัฒนาอย่างยั่งยืนของประเทศไทย (TOWARDS YOUTH PARTICIPATION IN RESPONDING TO CLIMATE CHANGE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT IN THAILAND) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: อ. ดร. แสงจันทร์ ลิ้มจิรกาล, 226 หน้า.

ภูมิภาคเอเชียตะวันออกเฉียงใต้นับเป็นภูมิภาคที่มีความล่อแหลมสูงต่อการเปลี่ยนแปลงสภาพภูมิอากาศ โดยมีแนวโน้มที่จะทวีความรุนแรงและส่งผลกระทบต่อสภาพสังคม เศรษฐกิจ และสิ่งแวดล้อม ปัจจุบันและ ในอนาคต ในขณะที่นโยบายระหว่างประเทศ ให้การสนับสนุนและผลักดันองค์ความรู้ แก่เยาวชนให้มีส่วนร่วมในเรื่องการเปลี่ยนแปลงสภาพภูมิอากาศและการพัฒนาอย่างยั่งยืน ส่วนในระดับชาติพบว่านโยบายไม่สอดคล้อง และเอื้ออำนวยให้เยาวชนมีส่วนร่วมในทางปฏิบัติอย่างแท้จริง การศึกษาการมีส่วนร่วมของเยาวชนกับ การเปลี่ยนแปลงสภาพภูมิอากาศในบริบทของการพัฒนาอย่างยั่งยืนในภูมิภาคเอเชียตะวันออกเฉียงใต้พบว่า มีน้อยมาก เพื่อให้เกิดความเข้าใจและสามารถหาแนวทางในการจัดการประเด็นดังกล่าวได้ งานวิจัยนี้ จึงได้ทำการศึกษาการมีส่วนร่วมของเยาวชนในการตอบสนองต่อการเปลี่ยนแปลงสภาพภูมิอากาศในบริบทของการพัฒนาอย่างยั่งยืนในประเทศไทย โดยมีวัตถุประสงค์เพื่อ 1) ศึกษานโยบาย ยุทธศาสตร์ระดับชาติ และแผนการดำเนินงานที่เกี่ยวข้องระหว่างเยาวชนและการเปลี่ยนแปลงสภาพภูมิอากาศในบริบทของการพัฒนาอย่างยั่งยืน และ 2) แจกแจงปัจจัยสำคัญและความเป็นไปได้ของการมีส่วนร่วมของเยาวชนในการตอบสนองต่อการเปลี่ยนแปลง สภาพภูมิอากาศ การศึกษานี้ใช้วิธีการวิจัยแบบเชิงคุณภาพ โดยทำการสำรวจและบรรยายคุณลักษณะขององค์ประกอบเชิงนโยบายและเชิงปฏิบัติในประเทศไทย ประกอบด้วย 1) การศึกษาทบทวนนโยบายระดับนานาชาติ ระดับภูมิภาคและระดับประเทศ และ 2) การสัมภาษณ์ ผู้มีส่วนได้ส่วนเสียโดยใช้วิธีการสัมภาษณ์แบบกึ่งโครงสร้าง (Semi-structured interview)

ผลการศึกษาพบว่า ปัญหาระดับนโยบายและองค์กรหรือสถาบันที่เป็นอุปสรรคสำคัญต่อการมีส่วนร่วมของเยาวชนในการตอบสนองต่อการเปลี่ยนแปลงสภาพภูมิอากาศ ประกอบด้วย ความไม่สอดคล้องของนโยบาย ในระดับต่างๆ การขาดการประสานงานระหว่างหน่วยงานที่เกี่ยวข้อง ความสามารถที่จำกัดขององค์กรต่างๆรวมทั้งองค์กรท้องถิ่น การขาดงบประมาณดำเนินการและเงินทุนสนับสนุน ดังนั้นแบบจำลอง (Model) ที่นำเสนอมุ่งเน้นความต้องการการสนับสนุนเชิงนโยบาย การใช้ประโยชน์และสร้างเสริมโอกาสจากโครงสร้างขององค์กรที่มีอยู่ การลดอุปสรรคที่เกิดจากโครงสร้างขององค์กร รวมถึงการยกระดับการศึกษา การฝึกอบรมและนำเสนอโดยสื่อต่าง ๆ เพื่อเสริมสร้างสภาพแวดล้อมที่เหมาะสมต่อการมีส่วนร่วมในการตอบสนองต่อการเปลี่ยนแปลงสภาพภูมิอากาศของเยาวชน การปรึกษาหารือกันระหว่างผู้กำหนดนโยบายและผู้ปฏิบัติในการจัดทำนโยบายแห่งชาติให้มีความสอดคล้องกันเพื่อเพิ่มโอกาสการมีส่วนร่วม และการสร้างขีดความสามารถของเยาวชนทั้งในระดับชาติและระดับท้องถิ่น ซึ่งจะมีส่วนช่วยในการพัฒนาศักยภาพของเยาวชนสู่การเป็นผู้นำหรือตัวแทนในการเปลี่ยนแปลงทางสังคม และการพัฒนาอย่างยั่งยืน ทั้งนี้ควรมีการศึกษาวิจัยด้านเยาวชนต่อไปเพื่อให้มีการบูรณาการเยาวชนเข้าไปในนโยบายการเปลี่ยนแปลงสภาพภูมิอากาศ ทั้งในระดับท้องถิ่นและระดับชาติ

สาขาวิชา สิ่งแวดล้อม การพัฒนา และความยั่งยืน ลายมือชื่อนิสิต .....

ปีการศึกษา 2558 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

5587762820 : MAJOR ENVIRONMENT DEVELOPMENT AND SUSTAINABILITY
KEYWORDS: YOUTH PARTICIPATION / CLIMATE CHANGE / SUSTAINABLE DEVELOPMENT / THAILAND

JOANNE NARKSOMPONG: TOWARDS YOUTH PARTICIPATION IN RESPONDING TO CLIMATE CHANGE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT IN THAILAND. ADVISOR: SANGCHAN LIMJIRAKAN, D.Tech.Sc., 226 pp.

The Southeast Asian region is recognized as a highly vulnerable region to climate change, which is likely to exacerbate existing social, economic, and environmental issues for present and future generations. International policy supports efforts to educate and empower youth to participate in climate change and sustainable development issues, but incoherence in policy and practice at the national level can hinder youth participation in climate change. From the literature reviews, the study found that there are few studies examining youth participation in climate change in the context of sustainable development in Southeast Asia. To address this gap, this study examines youth participation in responding to climate change in the context of sustainable development in Thailand. The research had two objectives: 1) to study national policies, strategies, and action plans relative to youth and climate change in the context of sustainable development, and 2) to identify the significant conditions and possibilities for a youth participation model in responding to climate change. The study employed a qualitative approach that was exploratory and descriptive in nature. The investigation into policy and practice in Thailand comprised of two components: 1) a desk review of international, regional, and national policy, and 2) semi-structured interviews of stakeholders.

The findings found that policy and institutional issues were major challenges for youth participation in responding to climate change; namely the lack of coherent policy, lack of coordination between relevant agencies, limited institutional and local capacity, and lack of fiscal budget and insufficient funding. The proposed model highlighted the need for supportive policy, leveraging structural opportunities, minimizing structural barriers, and promoting education, training, and media in order to create an enabling environment for youth participation in responding to climate change. The implications for policy makers and practitioners are discussed regarding the development of coherent national policies, enhancing opportunities for youth participation, and capacity building at national and local levels that is conducive to empowering youth to be agents for societal change and sustainable development. Further research on youth is also recommended for mainstreaming them into climate change policy context at both local and national levels.

Field of Study: Environment Development and Sustainability Student's Signature .....
Advisor's Signature .....
Academic Year: 2015

ACKNOWLEDGEMENTS

The completion of this dissertation represents a major accomplishment in my academic career. This feat could not have been achieved without the help and advice of other people, to whom I wish to acknowledge my appreciation and gratitude.

I offer my deepest gratitude to my dissertation advisor, Dr. Sangchan Limjirakan, for her continued guidance throughout my time at Chulalongkorn University. I express my sincerest thanks to my thesis committee for their suggestions and insights; namely Assistant Professor Dr. Charit Thingsabadh, Chairman of the Committee; Associate Professor Dr. Sura Pattanakiat, External Examiner; Associate Professor Dr. Kansri Boonpragob, External Examiner; Dr. Narumon Arunotai, Committee Member, and Dr. Kallaya Suntornvongsagul, Committee Member.

The assistance of Ms. Suthida Wongsathapornpat, Deputy Director, and all the program officers at the Environment, Development and Sustainability (EDS) Program in coordinating with the Graduate School was invaluable and greatly appreciated.

I must also give thanks to all the respondents who participated in this research and whose cooperation and input made this research possible.

Although no words can fully express my appreciation, I offer special thanks to my family and friends for their unwavering support when I needed it the most. Their love and encouragement made it possible for me to continue in my PhD journey. Without these very special people, I would not have been successful in the pursuit of my dreams.

Finally, I would like to acknowledge the EDS Program and the Graduate School, Chulalongkorn University for the partial financial support for my studies.

CONTENTS

Page

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Page

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Page

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

LIST OF TABLES

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

LIST OF FIGURES

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

LIST OF ACRONYMS

AADMER	ASEAN Agreement on Disaster Management and Emergent Response
AEC	ASEAN Economic Community
AEEAP	ASEAN Environmental Education Action Plan
APCSS	Asia Pacific Coalition for School Safety
ASEAN	Association of Southeast Asian Nations
APSC	ASEAN Political Security Community
ASCC	ASEAN Socio-cultural Community
ASSI	ASEAN Safe Schools Initiative
CCE	Climate Change Education
CCMC	Climate Change Management and Coordination Division
CDM	Clean Development Mechanism
COP	Conference of the Parties
CRC	United Nations Convention on the Rights of the Child
CSD	United Nations Commission on Sustainable Development
CSR	Corporate Social Responsibility
CSS	Comprehensive School Safety
DDPM	Department of Disaster Prevention and Mitigation
DESD	United Nations Decade of Education for Sustainable Development
DEQP	Department of Environmental Quality Promotion
DFID	Department for International Development
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
EFA	Education for All
EESD	Environmental Education for Sustainable Development
ESAs	Education Service Areas
ESD	Education for Sustainable Development

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
EQM	Environmental Quality Management
GAP on ESD	Global Action Programme on Education for Sustainable Development
GIZ	Deutsche Gesellschaft für Internationale
GADRRRES	Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector
HFA	Hyogo Framework for Action
IPCC	Intergovernmental Panel on Climate Change
IALEI	International Alliance of Leading Education Institutes
IAP2	International Association of Public Participation
IDNDR	International Decade for Natural Disaster Reduction
IISD	International Institute for Sustainable Development
ISDR	International Strategy for Disaster Reduction
JPOI	Johannesburg Plan of Implementation
MGCY	Major Group on Children and Youth
MDGs	Millennium Development Goals
MOE	Ministry of Education
MoNRE	Ministry of Natural Resources and Environment
MSDHS	Ministry of Social Development and Human Security
NAMA	Nationally Appropriate Mitigation Action
NCCC	National Committee on Climate Change
NCSD	National Council for Sustainable Development
NCYDP	National Child and Youth Development Plan
NDPMC	National Disaster Prevention and Management Committee
NDPMP	National Disaster Prevention and Management Plan
NESDB	National Economic and Social Development Board
NESDP	National Economic and Social Development Plan
NGOs	non-governmental organizations
OBEC	Office of Basic Education Commission
OCCC	Office of Climate Change Coordination

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

OECD	Organization for Economic Cooperation and Development
ONEC	Office of National Education Commission
ONEP	Office of Natural Resources and Environmental Policy and Planning
ONESDB	Office of National Economic and Social Development Board
OPP	Office of Welfare Promotion, Protection and Empowerment of Vulnerable Groups
SDGs	Sustainable Development Goals
SNAP	Strategic National Action Plan
SWOT	Strengths, Weaknesses, Opportunities and Threats
TGO	Thailand Greenhouse Gas Organization
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Conference on Sustainable Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on Children
UNICEF	United Nations Children's Fund
UNISDR	United Nations Office for Disaster Risk Reduction
WCED	World Commission on Environment and Development
WCDR	World Conference on Disaster Reduction
WCDRR	World Conference on Disaster Risk Reduction
WPAY	World Programme of Action for Youth
WSSD	World Summit on Sustainable Development
Youth-SWAP	UN System-wide Action Plan on Youth

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

CHAPTER I
INTRODUCTION

1.1 Rationale and Statement of Problem

Global warming and associated changes in the climate system has become an international concern and is likely to be humankind's greatest challenge in the 21st century. The Intergovernmental Panel on Climate Change (IPCC) affirmed that climate change is unequivocal and observed changes are documented and unprecedented, including increasing temperatures, reduced amounts of snow and ice, rising sea-levels, and increased concentrations of greenhouse gasses (Intergovernmental Planel on Climate Change [IPCC], 2013). According to the IPCC, it is evident that human activity is the main cause of climate change from the addition of greenhouse gases, i.e. carbon dioxide, methane and nitrous oxides, to the Earth's atmosphere, causing global temperatures to rise and Earth's climate to change (IPCC, 2013). The effects are expected to intensify over the next decades and are predicted to drive policies and regional and global economies (IPCC, 2007; IPCC, 2013). While the IPCC states that substantial and sustained reductions of greenhouse gas emissions is required to limit climate change, it is evident that efforts are need to adapt to predicted climate change impacts. Climate change is a key priority for sustainable development in developing countries as its impacts are likely to be severe and exacerbate existing social, economic, and environmental issues.

The Working Group II Contribution to the 5th Assessment Report of the IPCC highlighted Southeast Asian region as one of the most vulnerable regions to climate change impacts due to warmer temperatures, more intense precipitation events, changes in monsoons, cycles of flooding and drought, sea-level rise, warmer oceans, and acidification (IPCC, 2014). Climate change puts the heavily-populated megadelta regions of Southeast Asia at risk from flooding from the sea and the rivers. In 2011, flooding in 65 of Thailand's 77 provinces resulted in 884 deaths, 13.6 million people affected and an estimated 46.5 billion USD in damages (United Nations Economic and Social Commission for Asia and the Pacific [ESCAP] and United Nations Office for

Disaster Risk Reduction [UNISDR], 2012). Changes to the hydrological cycle can also lead to water scarcity, reduce productivity of the agricultural sector and negatively impact rural livelihoods. Thailand's long coastlines are prone to coastal erosion and sea-level rise that could threaten coastal populations and the tourism industry. As such, climate-related challenges coupled with rapid urbanization pose an immediate and significant threat to sustainable development in Thailand.

Education on climate change, particularly for youth, is necessary for improving the capacity of people to address environmental and developmental issues relevant to climate change. Children and youth between the ages of 10 and 24 years old comprise approximately 1.8 billion of the world's population of 7.3 billion, with 89 % of these living in less developed countries (Das Gupta, Engelman, Levy et al., 2014). Empowering today's youth to alleviate climate change impacts should be an important goal of education since youth are the future citizens and decision makers that must live with the impacts of climate change and take action on implementing solutions. Doherty and Clayton (2011) stated that participation and engagement of citizens could counter anxiety or apathy that results in the feeling of being incapable of contributing to such a complex, uncertain, and intangible dilemma like global climate change. The active participation of youth would make it possible to include intergenerational viewpoints of present and future citizens that are fundamental to sustainable development. Consequently, the international community has supported efforts to bring youth concerns into international negotiations.

Several international frameworks support youth as key stakeholders in sustainable development and climate change, including *Agenda 21* from the Rio Earth Summit in 1992 and Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC). Chapter 25 of *Agenda 21* encourages the participation of youth in decision-making to benefit by their contributions and mobilizing their support in sustainable development. Further, Chapter 36 of *Agenda 21* deals with "Promoting Education, Public Awareness, and Training" and promotes the reorientation of education towards sustainable development, increasing public awareness, and providing training. The UNFCCC, through its Article 6 on Education, Training, and Public Awareness, calls on governments to implement educational and training programs on climate change which

educate, empower and engage all stakeholders. Within the Doha work program on Article 6, youth are targeted specifically in the section for education and mentioned as a major group for participation in formulation and implementations of decisions on climate change. These institutional frameworks on sustainable development and climate change encourage the empowerment of youth through education and participation to progress sustainable development goals by effectively responding to climate change.

Climate change is acknowledged as a major risk to Thai society and national development. One of the missions of Thailand's Eleventh National Economic and Social Development Plan (NESDP) (2012-2016) is "to build a secure natural resource and environmental base by community participation and improving resilience to cushion impacts from climate change and disasters" (National Economic and Social Development Board [NESDB], n.d., p. 23). Furthermore, the Eleventh Plan emphasizes a holistic, people-centered development approach to ensure more balanced development, increased overall productivity and improved quality of life through broad-based public participation in the development process. Thailand seeks to build resilience for climate change and disasters by increasing knowledge, participation and capacity in development and decision-making.

Thailand's national focal point for the UNFCCC, the Office of Natural Resources and Environmental Policy and Planning (ONEP), has developed National Strategies on Climate Change (2008-2012). Strategy 4 of this plan seeks to raise awareness and promote public participation through public campaigns of climate change education, encouraging community participation, providing public hearings, and the inclusion of climate change education in school curricular activities (Office of Natural Resources and Environmental Policy and Planning [ONEP], 2007). However, within the Basic Education Core Curriculum B.E. 2551 (2008) set by Thailand's Ministry of Education, climate change is minimally addressed in the seventh grade science curriculum. The curriculum focuses on "understanding of various process on the Earth's surface and interior, global warming, ozone holes, acid rain" as a part of Strand 6 on Change Processes of the Earth (Office of Basic Education Commission [OBEC], 2008, p. 16), without providing a holistic coverage of climate change causes, impacts, possible

solutions, and avenues for individual and collective action. Therefore, this gap between climate change policy and programs targeted towards youth in terms of providing appropriate education and participation for effective responses to climate change is the impetus for this study.

Climate change is a relatively new issue for many decision-making and management bodies in Thailand, especially in terms of linking climate change, education, and public participation. From Thailand's Initial and Second National Communication under the UNFCCC in 2000 and 2010, the country's efforts for education on climate change tended to emphasize youth involvement in natural resource and energy conservation to promote environmental consciousness (Office of Environmental Policy and Planning [OEPP], 2000; ONEP, 2010). These initial steps towards climate change education are promising although they insufficiently address educating youth about the realities of climate change and their participation in dealing with the direct and indirect impacts of climate change in their present and future lives. In order to prepare current and future generations to be key agents of change, young people need support to become informed participants through appropriate policies, education, information, resources, and guidance.

1.2 Objective of the Study

This research is guided by the following research objectives:

1) To study national policies, strategies, and action plans related to youth and climate change in the context of sustainable development.
2) To identify significant conditions and possibilities for a youth participation model in responding to climate change.

1.3 Outcomes

1) Evaluation and recommendation on national policies, strategies and action plans related to youth and climate change in the context of sustainable development.
2) A youth participatory process model in responding to climate change in Thailand that adheres to the principles of sustainable development.

1.4 Significance of the Study

While research has been conducted to assess public understanding of climate change, few studies focus on the inclusion of the youth segment of the population in climate change policy and decision-making. Much of our understanding of education, youth involvement strategies, and youth participation in climate change derives from studies in western, industrialized countries that focus primarily on climate change mitigation. Youth participation in international forums is dominated by youth from the global north and the global south remains underrepresented. Further, studies on youth participation in climate change in the context of sustainable development in Southeast Asia are still limited. This research seeks to narrow this gap.

In terms of policy, this study could inform policymakers and practitioners about the conditions for youth participation in climate change issues in Thailand. As a member state to international policy and initiatives on climate change and sustainable development, including *Agenda 21*, the Johannesburg Plan of Implementation, *The Future We Want*, and Decision 15/CP.18 on Article 6 of the UNFCCC, Thailand should support youth participation in these issues. Appropriate actions to implement youth participation in climate change at the national policy level may be lacking or inconsistent with the mentioned policies. Therefore, this study would bring to light gaps in existing policy and practice as well as areas for improvement to successfully encourage authentic youth participation in responding to climate change and achieving sustainable development that can be applied to other countries and regions.

CHAPTER II
LITERATURE REVIEW

In considering the involvement of youth in climate change and sustainable development, it is first necessary to review the historical and policy context. The field of sustainable development developed over a period of forty years and initially focused primarily on environmental degradation. As the link between environmental degradation and poverty grew, sustainable development increasingly included the views of environmental and social justice. With growing awareness of climate change as a global environmental problem, climate change has become one of the major concerns for countries around the world.

Education has a role to play in these in changing practice, behavior, and action towards a more sustainable future. The discourse on environmental degradation and sustainable development has provoked educational responses, such as environmental education and education for sustainable development. More recently, the concerns about climate change have resulted in growing interest in climate change education. The following items reviews the international conferences linked to sustainable development and their significant outcomes, inclusion of public participation and educational responses, understandings of youth and youth participation, youth and their participation in sustainable development, the impact of climate change on youth and the importance of youth in responding to climate change, and the relationship and linkages between climate change and sustainable development.

2.1 Relevant Historical International Policy Context

2.1.1 Stockholm Conference (1972)

The United Nations Conference on the Human Environment, or Stockholm Conference, was held at Stockholm on 5-16 June 1972 to address growing concerns over changes to environmental conditions and the need for resource preservation. The Stockholm Conference was the first international conference focused on the global human impact on the environment and set environmental policy goals. The United Nations Environment Programme (UNEP) was established at the conference as an international

institution to coordinate United Nations (UN) activities related to the environment and the promotion of environmentally-friendly policy and processes. Following the conference, global awareness and activism on environmental issues increased.

The Declaration of the United Nations Conference on the Human Environment, or Stockholm Declaration, contained 7 proclamations and 26 principles for the preservation and enhancement of the environment. Principle 2 of the Stockholm Conference states:

> the natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generation through careful planning or management, as appropriate (United Nations Educational, Scientific, and Cultural Organization – United Nations Environment Programme [UNESCO-UNEP], 1972, p. 99).

Furthermore, Principle 19 of the Stockholm Conference supported environmental education as a means to address environmental issues. Education is stated to be "the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities" in resource protection and ecosystem management (UNESCO-UNEP, 1972). Recommendation 96 of the Stockholm Conference called for environmental education as a critical element to developing new knowledge, skills, values, and attitudes of society to improve the quality of the environment. Environmental education was promoted in the international arena as a result.

2.1.2 Belgrade Charter (1975) and Tbilisi Declaration (1977)

Following the Stockholm Conference, the International Workshop on Environmental Education was held in Belgrade on 13-22 October 1975. The outcome of the workshop, the Belgrade Charter, provided a definition of environmental education as a process aimed at developing "a world population that is aware of, and concerned about, the total environment and its associated problems, and which has the knowledge, attitudes, motivations, commitments, and skills to work individually and collectively towards solutions of current problems and the prevention of new ones" (UNESCO-UNEP, 1976,

p. 3). The Belgrade Charter includes the general public as a target of environmental education to build public awareness and understanding of environmental issues in the formal and non-formal education sector.

The United Nations Educational, Scientific and Cultural Organization (UNESCO), in cooperation with UNEP, organized the world's first intergovernmental conference on environmental education at Tbilisi, Georgia from 14-26 October 1977. The Tbilisi Declaration was adopted at the conclusion of the conference and affirmed the importance of environmental education in preserving and improving the world's environment and balanced development worldwide (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1978).

The five objectives of Tbilisi Declaration on environmental education are:

> *Awareness* – to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems;
>
> *Knowledge* – to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of, the environment and its associated problems;
>
> *Attitudes* – to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection;
>
> *Skills* – to help social groups and individuals acquire the skills for identifying and solving environmental problems;
>
> *Participation* – to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems. (UNESCO, 1978)

Environmental Education is grounded in the Belgrade Charter and the Tbilisi Declaration. Both documents built upon the Stockholm Declaration to clarify and designated goals, objectives, and guiding principles of environmental education. The Declaration and Recommendations of the Tbilisi Intergovernmental Conference on

Environmental Education later influenced the principles for Chapter 36 on Promoting Education, Public Awareness and Training of *Agenda 21* in the 1990s.

2.1.3 World Commission on Environment and Development (1987)

The World Commission on Environment and Development (WCED), also known as the Brundtland Commission, introduced the concept of sustainable development. The Report produced by the WCED, *Our Common Future*, defined sustainable development as: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Conference on Environment and Development [WCED], 1987, para. 1). Although interpretations of this definition vary, sustainable development is taken to comprise of that balance of the three dimensions of environment, economy, and society to meet the basic needs of all, now and in the future, given finite environmental resources. The report prioritized sustainable development in the global development agenda.

One of the principles of sustainable development presented in *Our Common Future* is that of equity. The inclusion of citizen participation in decision-making in political systems was promoted as a strategy to ensure this equity (para. 28). In order to make difficult decisions regarding sustainable development, the Commission recommends the "involvement of an informed public and of NGOS, the scientific community, and industry" (WCED, 1987, para. 96). The nature of the document itself is a call for greater awareness and participation in addressing the environmental and social crises. Subsequently, major international conferences resulted to improve intergovernmental collaboration on sustainable development, starting with the Earth Summit in 1992.

2.1.4 United Nations Conference on Environment and Development (1992)

The United Nations Conference on Environment and Development (UNCED), known as the Rio Conference or Earth Summit, held on 3-14 June 1992 in Rio de Janeiro, Brazil. The conference was successful in linking environment and development. The significant outcomes of the Earth Summit include: the Rio Declaration on Environment

and Development, *Agenda 21* and major international treaties and agreements on climate change, biological diversity, deforestation, and desertification.

The Rio Declaration consists of 27 guiding principles for sustainable development. Following the mention of public participation and role of youth in *Our Common Future*, the Rio Declaration expands the role of public participation in sustainable development and identifies youth as a resource to be mobilized. In addition, Principle 10 of Rio Declaration supports public awareness, access to information, and participation in decision-making processes. It states that following:

> Environmental issues are best handled with the participation of all concerned citizens at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities […] and the opportunity to participate in decision-making processes. (United Nations Conference on Environment and Development [UNCED], 1992b, p. 3)

The Summit resulted in an action plan called *Agenda 21* that has become the blueprint for implementation of sustainable development programs on international, national, regional, and local levels. The preamble of *Agenda 21* encourages "the broadest public participation and the active involvement of the non-governmental organizations and other groups" (UNCED, 1992a, para. 1.3). The nine major groups identified by *Agenda 21* are business and industry, children and youth, farmers, indigenous peoples, local authorities, non-governmental organizations (NGOs), scientific and technological community, women, and workers and trade unions. These nine major groups represent part of civil society that are called upon to participate in implementing *Agenda 21*.

Within *Agenda 21,* education is mentioned in every chapter and identified as an integral strategy for sustainable development. Education serves as a way of improving the quality of human life and reducing poverty as well as a method for changing views, attitudes, and behaviors towards environmental and resource conservation. Chapter 36 "Promoting Education, Public Awareness, and Training" established three program areas: 1) reorienting education towards sustainable development, 2) increasing public

awareness, and 3) promoting training (UNCED, 1992a). Education is linked with building understanding and capacity for dealing with environmental and developmental issues.

> Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviors consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication. (UNCED, 1992a, para. 36.3)

Within this understanding of education's role, at all levels, for promoting sustainable development, education provides the foundation for an informed citizenry capable of engaging in the decision-making process. Furthermore, this orientation of education is fundamental to creating public awareness on sustainable development "as an essential part of global education effort to strengthen attitudes, values, and actions which are compatible with sustainable development" (UNCED, 1992a, para. 36.9).

From *Agenda 21*, the importance of public participation, youth and education within the context of sustainable development is established. Public participation and education are identified as means for implementing sustainable development while youth are identified as a major stakeholder and target for participation and education.

2.1.5 United Nations Framework Convention on Climate Change (1992)

The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty focusing on stabilizing greenhouse gas emissions and anthropogenic climate change. The UNFCCC was adopted on 9 May 1992 and entered into force on 21 March 1994. The parties to the convention have met annually since 1995 in Conference of the Parties (COP) to assess progress in dealing with climate

change. The COP utilizes outputs and data of the Intergovernmental Panel on Climate Change (IPCC), a scientific body that reviews and assesses scientific, technical, and socioeconomic information on climate change, in making informed decisions. The 195 parties are currently classified as Annex I countries, industrialized countries belonging to the Organization for Economic Cooperation and Development (OECD) and 12 countries in transition from Central and Eastern Europe, and Non-Annex I countries.

The UNFCCC recognizes the global and anthropogenic nature of climate change as necessitating an international agreement and response. The definition of climate change given by the UNFCCC is "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC, 1992, p. 7). Article 3 of the UNFCCC calls on parties "to protect the climate system for the benefit of present and future generations of humankind, on the basis of equity" (UNFCCC, 1992, p. 9) and recognizes their rights to sustainable development. One of the commitments in Article 4 is for all parties to "promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process" (UNFCCC, 1992, p. 11). The commitment is expanded in Article 6 to promote educational and public awareness at national and regional levels through (UNFCCC, 1992):

> The development and implementation of educational and public awareness programs on climate change and its effects;
>
> Public access to information on climate change and its effects;
>
> Public participation in addressing climate change and its effects and developing adequate responses; and
>
> Training of scientific, technical and managerial personnel. (p.17)

The UNFCCC established the Kyoto Protocol in 1997 and entered into force on 16 February 2005. The Kyoto Protocol is a legally binding international agreement that sets greenhouse gas emissions reduction commitments for ANNEX I Parties to a 1990-baseline. In relation to education, Article 10 of the Kyoto Protocol promotes education

and training to build public awareness and access to knowledge on climate change (UNFCCC, 1998). The first commitment period began in 2008 and ended in 2012. The "Doha Amendment to the Kyoto Protocol" was adopted on 8 December 2012 and reaffirms efforts towards emissions reduction by ANNEX I Parties in order to achieve the Convention's objectives and its provisions towards sustainable development (UNFCCC, 2012a). The second commitment period will end in 2020.

2.1.6 World Summit on Sustainable Development (2002)

In 2002, the World Summit on Sustainable Development (WSSD), or Rio+10, was held in Johannesburg, South Africa from 26 August to 4 September. At the World Summit, the 10-year follow-up to the Earth Summit, the understanding of sustainable development was expanded to include linkages between poverty, the environment and the use of natural resources. The Summit reconfirmed sustainable development as a central component of the international agenda.

In this Summit, the Johannesburg Plan of Implementation (JPOI) was adopted and set three priorities for sustainable development, namely poverty eradication, changing unsustainable patterns of consumption and production, and protecting and managing the natural resource base of economic and social development (United Nations [UN], 2002). Within the JPOI, children and youth are identified as important stakeholders for participation in policy-making and implementation of sustainable development. The role of education and media in building awareness about sustainable development was also reaffirmed and the adoption of a United Nations Decade of Education for Sustainable Development (DESD) was recommended at the summit.

2.1.7 United Nations Decade of Education for Sustainable Development (2005-2014)

Following the recommendation of the World Summit in Johannesburg, the UN General Assembly resolution assigned UNESCO as the lead agency for the United Nations Decade of Education for Sustainable Development (UNESCO, 2006). UNESCO works in collaboration with initiatives and programs in other UN agencies, governmental

partners, private sector companies and non-governmental organizations to mobilize stakeholders and promote the DESD.

UNESCO's vision for Education for Sustainable Development (ESD) supports the realization of a world where everyone has access to education that promotes the values, behavior and lifestyles for a sustainable future and is conducive t0o positive societal transformation (UNESCO, 2006).

The DESD translates this vision into five objectives as follows (UNESCO, 2006):

> To give an enhanced profile to the central role of education and learning in the common pursuit of sustainable development;
>
> To facilitate links and networking, exchange and interactions among stakeholders in the Decade of Education for Sustainable Development;
>
> To provide a space and opportunity for refining and promoting the vision of, and transition to sustainable development – through all forms of learning and public awareness;
>
> To foster increased quality of teaching and learning in education for sustainable development;
>
> To develop strategies at every level to strengthen capacity in ESD (p. 24).

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The field of education for sustainable development derives many of its roots from environmental education. The fields of ESD and environmental education are distinct, although they do overlap, with ESD emphasizing the link between environment and development where environmental education does not. ESD is based on the principles and values of sustainable development and the three dimensions of sustainability: environment, society, and economy. Furthermore, ESD comprises of four thrusts: improving access to and retention in quality basic education, re-orienting existing education programs to address sustainability, increasing public awareness, and providing training (UNESCO, 2011). ESD is a continually evolving concept that goes beyond environmental education to achieving human development in an inclusive and equitable manner. ESD includes human rights, gender equality, cultural diversity,

climate change education, international understanding, and peace. The DESD provides an opportunity to promote global implementation of ESD.

2.1.8 United Nations Conference on Sustainable Development (2012)

The United Nations Conference on Sustainable Development (UNCSD), or Rio+20, was held on 13-22 June 2012, in Rio de Janeiro, Brazil. Rio+20 marked the 20-year follow-up to the 1992 Earth Summit held in Rio. The conference objectives were to reaffirm political commitment to *Agenda 21*, assess progress and remaining gaps, and address new and emerging challenges, including globalization and climate change.

The Future We Want, the outcome document of Rio+20, continued to endorse the principles and values of *Agenda 21*. Support of public participation and civil society involvement were reiterated in paragraphs 43 and 44 which "underscore that broad public participation and access to information and judicial and administrative proceedings are essential to the promotion of sustainable development" and "acknowledge the role of civil society and the importance of enabling all members of civil society to be actively engaged in sustainable development". Furthermore, *The Future We Want* (2012) views the younger generations as the stewards of the future and continued to "promote Education for Sustainable Development and to integrate sustainable development more actively into education beyond the United Nations Decade of Education for Sustainable Development" (para. 233).

Climate change challenges nations of the world to think beyond their own borders and act in the interest of the global community in a coordinated and unified manner. The various conferences and resulting policies reflect a progression of three interlinked discourses: environmental concern, education, and participation. Starting from the Stockholm Conference and the Brundtland Commission to the Rio Earth Summit, Johannesburg World Summit, and taRio+20, concern over environmental degradation and pollution lead to international cooperation to improve the environment and natural resource management in order to progress towards sustainable development. From the Rio Summit, the UNFCCC resulted to specifically address climate change as a global environmental challenge requiring immediate action. A second discourse identifies participation as a fundamental element of sustainable development and climate change

as a major strategy for engaging the public in decision-making and implementation of programs and policies on global and local scales. Within the previous two discourses, the role of education is viewed as vital to building awareness on environmental issues, facilitating participation, and finding appropriate solutions as seen in the Belgrade Charter, Tbilisi Declaration, Agenda 21, Article 6 of the UNFCCC, and the DESD. These three interrelated discourses present an international policy framework for collaboration on environmental dilemmas, climate change and sustainable development.

2.2 Participation in Environment and Development

Public participation of citizens in decision-making is a common goal that is advocated within environmental policy. The 1992 Rio Earth Summit affirmed that genuine involvement of the public and non-government actors is crucial to achieving sustainable development goals. Principle 10 of the Rio Declaration designates public participation as a major principle in environmental governance and that "environmental issues are best handled with participation of all concerned citizens, at the relevant level" (UNCED, 1992b, p. 3). The concept of public participation seeks to involve those who are potentially affected by a decision. The action plan resulting from the Earth Summit, *Agenda 21*, called for national strategies towards sustainable development with broad public participation at local, regional, and national levels. Subsequently, participation has become a norm in the sustainable development agenda.

While public institutions and organizations worldwide are responding to demand for increased participation, the exact meaning of participation to these different actors can vary greatly. The World Bank defined participatory development as "a process through which stakeholders influence and share control over development initiatives, and the decisions and resources which affect them" (1994, p. 1). Bhatnagar and Williams (1992) viewed participation as "a function of information through which people can come to share a development vision, make choices, and manage activities" (p.6). The definition of participation used by the International Association of Public Participation (International Association for Public Participation [IAP2], n.d.) includes all aspects of public involvement in identifying problems and opportunities, developing alternatives,

and decision-making by those who are likely affected by the decisions. Generally, participation is a process through which stakeholders influence and share control over policy setting, policy-making, resource allocation, and activities.

Governments and other agencies can use public participation as a tool to promote citizen engagement into environmental governance and policy-making processes. Gemmill and Bamidele-Izu (2002) contended that governance on environment can be strengthened through participation of civil society, including persons, and organizations, in five key areas, namely 1) information collection and dissemination, 2) policy development and consultation, 3) policy implementation, 4) assessment and monitoring, and 5) advocacy for environmental justice. Public involvement in environmental governance is intended to produce better decisions, increased commitments and compliance among stakeholders and thus benefit society (Beierle, 1999). Rather than involving only governments in the decision-making process, public participation allows citizens to give input and influence policies and programs that are relevant to their communities.

Wesselink, Paavola, Fritsch et al. (2011) summarized three rationales for participation that is instrumental, substantive, and normative. The instrumental rationale proposes that participation increases legitimacy of decisions and improved results. The policy goals are set but the details can be influenced. The substantive rationale values the input of non-experts in order to improve the quality of the decision with a wider range of information. In this case, the policy goals can be changed. The normative rationale is a democratic ideal that supports maximum participation by all who are affected by a decision. These three rationales are often cited by advocates of public participation in decision-making processes and influence the choices made in participatory processes. Although all three rationales are often cited as benefits to the participatory process, Wesselink et al. (2011) acknowledged that there are potential contradictions between the various arguments. The participation rationales guide design choices in the participatory process as to who, what, and how participants are included as summarized in Table 2.1.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 2.1 Participation Rationales and Design Choices for Participation

	Normative rationale	**Substantive rationale**	**Instrumental rationale**
Who included	those who have a stake	those who possess additional knowledge	those who have blocking power and those who are vital to implementation
What included	participant's concerns and views	policy makers' concerns; knowledge and views of stakeholders	Policy makers' concerns; selected knowledge and views
How included	in all stages and issues	only when it adds value substantively	only in order to ensure smooth implementation

Source: Wesselink et al. (2011)

Environmental and development problems are typically complex, multi-scale, and affect multiple stakeholders and agencies. Although the meaning and rationale for participation varies, stakeholder participation in decision-making has become embedded into international and national policy due to the interrelated nature of environmental and development problems that requires a variety of knowledge and viewpoints, including local and scientific knowledge. Participation seeks to reach the goal of ecological and socioeconomic equity by involving the public in environmental and developmental issues.

2.2.1 Typologies of Participation

Arnstein (1969) developed one of the most influential typologies of participation – a ladder of participation that categorizes participation into eight levels as shown in Table 2.2. The first two levels are described as non-participation due to a lack of genuine participation. These levels are manipulation and therapy. The next two levels, informing and consultation, are described as tokenism where information and voice is provided. In the next level, placation, citizens are permitted to advise, but powerholders have the right to decide. In partnership, citizens can negotiate and engage in trade-offs

with powerholders. On the last two levels, delegated power and citizen control, citizens are engaged in decision-making, or have managerial power. Arnstein viewed citizen participation as a redistribution of power that enables citizens who are excluded from political and economic processes to be included. Higher levels of participation allow traditionally excluded citizens to have input in how information is shared, policies and programs are set and resources are allocated.

Table 2.2 Arnstein's Ladder of Participation

8	Citizen Control	Degrees of Citizen Power
7	Delegated Power	
6	Partnership	
5	Placation	Degrees of Tokenism
4	Consultation	
3	Informing	
2	Therapy	Non-Participation
1	Manipulation	

Source: Arnstein (1969)

Alternative typologies of participation exist for various organizations and purposes. In the World Bank programs, the intensity of the participation can be defined on four levels of increasing intensity that may exist at different phases of the process: information sharing, consultation, decision-making, and initiating action (Bhatnagar and Williams, 1992). The International Association for Public Participation used a situational approach to derive a continuum of five participatory relationships consisting of informing, consulting, involving, collaborating, and empowering (IAP2, 2007). Focusing on the nature of the engagement, Rowe and Frewer (2000) identified different types of public engagement by the direction of communication flow between parties, such as one-way information flow to participants or two-way communication between participants and organizers. Bass, Dalal-Clayton and Pretty (1995) presented a typology of participation in policy making that can involve narrow or broad participation as show in Table 2.3.

Table 2.3 Narrow or Broad Participation in Policymaking

Activity	**Example**
Participants listening only	receiving information disseminated by government campaign
Participants listening and giving information	through public inquiries and media activities
Participants being consulted	through working groups and meetings held to discuss policy
Participation in analysis and agenda-setting	through multi-stakeholder groups, round tables, and commissions
Participation in reaching consensus on main strategy elements	through national round tables, parliamentary/select committees, and conflict mediation
Participants involved in decision-making.	through involvement in policy, strategy or its components

Source: Bass et al. (1995)

Participation can occur at different stages of the strategy cycle as depicted in Figure 2.1. Developing a participatory approach throughout this cycle facilitates the inclusion of all groups who are likely to be affected (Bass et al., 1995). The cycle of information gathering, analysis, decision-making, capacity building, implementation, monitoring and review are represented as a series of steps, but may occur concurrently in practice. Different kinds of participation may be applied to different stages, as appropriate. Since it would be impossible to involve everyone at every stage, it is important to be clear which decisions the public have the opportunity to participate in, for what purpose, and who will be involved (Cornwall, 2008).

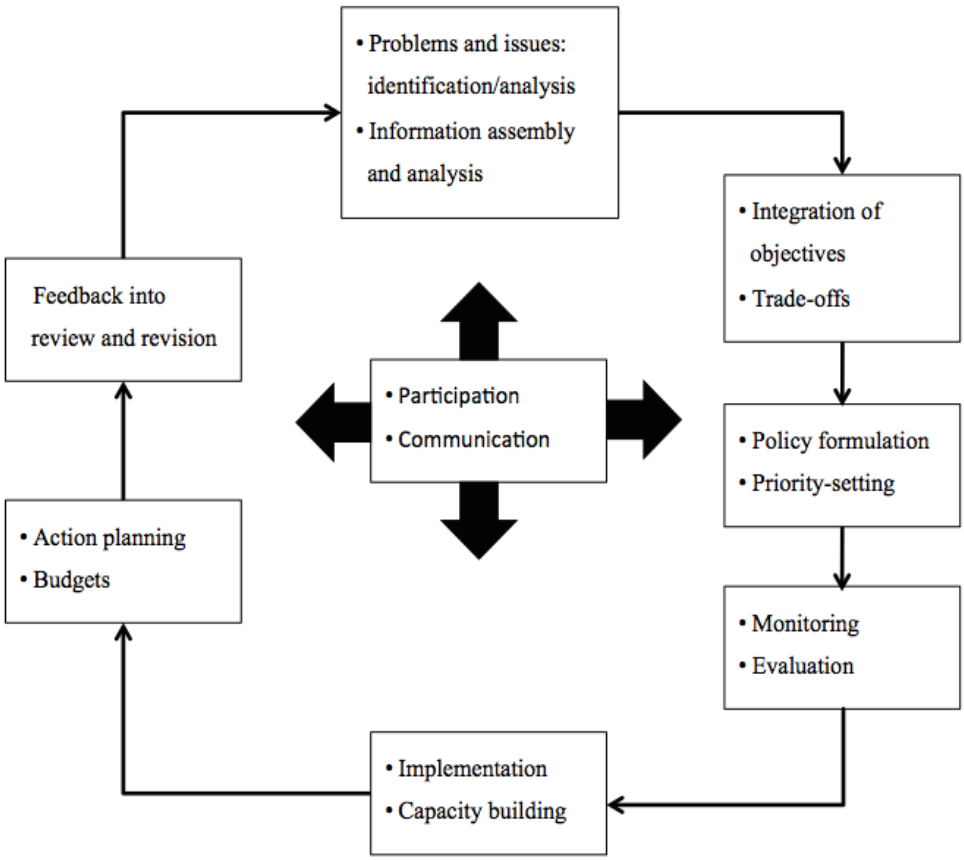

Figure 2.1 Participation in the strategy cycle.

Source: Bass et al. (1995) from Carew-Reid et al. (1994)

According to King, Feltey and Susel (1998), the public participation process consists of four components: 1) the issue or situation, 2) the administrative structures, systems and processes 3) the administrators, and 4) the citizens. Conventional participation processes are framed with the issue as the central point, the citizens furthest away from the issue, the administrative structures and processes closest to the issue, and the administrator between the structures and the citizens (King, 1998). This means that the administrative structures and processes are the political and social frameworks that the administrator must operate once the issue has been defined. This type of participation is ineffective as it occurs after the issues have been defined and much of the decision-making has occurred and the administrator controls the ability of citizens to influence the situation or process.

In contrast to conventional participation, authentic participation requires participation to be an integral part of administration and provides the opportunity for all involved to have an effect on the situation (King et al., 1998). The context of authentic participation places the citizen closest to the issue, the administrative structures and processes are furthest away and the administrator remains between the citizens and structures. In this case, the citizens play a central role in the process with equal opportunity to immediately influence the processes and outcomes. The administrative structures and processes are defined based on the interactions of the citizens and administrators.

Participation provides an opportunity for citizens to take part and have influence over the decisions and actions that affect their lives. These typologies of participation emphasize that meaningful participation is a process and not isolated activities or events. Participation activities can vary at different stages of a strategy cycle or in different situations as part of a continuum of participation based on context, purposes and participants. While typologies provide clear and distinct categories of participation, in practice they are more ambiguous and indistinct due to the complex interaction among participants.

2.2.2 Benefits of Participation in Environmental Decision-making

Public participation is a particularly desirable in environmental policymaking. By working together to establish trust and partnership, participation may lead to improved quality of environmental decisions and a sense of ownership over processes and outcomes that may lead to reduced implementation costs and increased effectiveness (Reed, 2008). Participation promotes active citizenship to benefit the environment and society based on the ideals of democracy and equity.

The success of public participation is often evaluated on the participatory process as well as the outcome of the process (Chess and Purcell, 1999). The framework of social goals offered by Beierle (1999) takes a broader view of the outcomes of participatory processes beyond the decisions, conclusions or recommendations to include: 1) educating the public, 2) incorporating public values, assumptions, and preferences into decision-making, 3) increasing the substantive quality of decisions, 4) fostering trust in institutions, 5) reducing conflict, and 6) making decisions cost-effectively. The

framework can be used to evaluate participatory programs and whether various mechanisms are suited for specific needs.

The advantages of citizen involvement in decision-making can be evaluated along to two factors: benefits (process and outcomes) and beneficiaries (government and citizens) (Irvin and Stansbury, 2004). A major benefit is that citizens become informed and involved, able to understand difficult socio-scientific situations and visualize holistic solutions. A related outcome would be better policy decisions and better social and environmental outcomes. Political persuasion can occur as governments build trust by involving citizens and citizens are empowered to convey their views and influence the process. Participatory initiatives can facilitate in finding compromise among stakeholders and can reduce the probability of litigation. The advantages of citizen participation in decision-making are shown in Table 2.4.

Table 2.4 Advantages of Citizen Participation in Government Decision-making

	Advantage to citizen participants	**Advantage to government**
Decision Process	Education (learn from and inform government representatives) Persuade and inform government Gain citizenship skills for activism	Education (learn from and inform citizens) Persuade citizens; build trust, and reduce anxiety or hostility Build beneficial alliances Legitimacy of decisions
Outcomes	Break gridlock; achieve outcomes Gain some influence over policy process Improved policy and implementation of decisions	Achieving outcomes Breaking gridlocks Avoid litigation costs Improved policy and implementation of decisions

Source: Irvin and Stansbury (2004)

Reed (2008) argued that the commonly used "tool-kit" approach to participation, which emphasizes the selection of appropriate tools for the job, needs to be replaced with an approach that emphasizes the participation process. From a Grounded Theory Analysis of literature on participation, Reed concluded that effective participation needs to be

underpinned by a philosophy that emphasizes empower, equity, trust and learning. When relevant, participation should be considered early and throughout the process with the stakeholders represented systematically. The process should have clear objectives with methods selected and tailored to the context and highly skilled facilitation. Local and scientific knowledge should be integrated in order to provide a better understanding of socio-scientific processes. Reed also proposed that participation must be institutionalized into organizations in an effort to overcome many of its current limitations.

A review of studies on public meetings, workshops, and community advisory committees by Chess and Purcell (1999) supported the notion presented by Reed that public participation should have clear goals, begin participation early and use various mechanisms to meet process or outcome goals. The authors also recommended implementation of public participation programs with several forms of participation and to collect feedback on participation efforts and their success. They concluded that the mechanism for participation might not determine process or outcome since there are contextual factors influencing participation success.

2.2.3 Challenges to Participation

There are many criticisms of participation for being ineffective and costly (Irvin and Stansbury, 2004), difficult to evaluate (Abelson, Forest, Eyles et al., 2003; Beierle, 1999; Rowe and Frewer, 2000), and need for new approaches (Abelson et al., 2003; Innes and Booher, 2004; King et al., 1998). There is no consistent method for the participation process itself or evaluation of success or failure of the process (Beierle, 1999), thus making comparisons of participatory processes and practices difficult. These challenges detract from the beneficial impacts of participation as the public can become distrustful of participatory practices.

The disadvantages of citizen involvement in decision-making are explained by Irvin and Stansbury (2004) in relation to two factors which are barriers (process and outcomes) and beneficiaries (government and citizens). The cost of citizen participation requires more resources than decision-making of an agency administrator and requires heavy time commitments from citizens and government. It is difficult to build trust and

implement collaborative decision-making in large groups with diffuse interests. Unbalanced representation of stakeholders can result in decisions that favor more powerful or persuasive groups, which can result in decisions rather that are not beneficial to the wider public. Participatory processes that lack of real authority to influence decisions result in increasing public dissatisfaction towards the government as shown in Table 2.5.

Table 2.5 Disadvantages of Citizen Participation in Government Decision-making

	Disadvantage to citizen participants	**Disadvantage to government**
Decision process	Time consuming May be futile if decision is disregarded	Time consuming Costly May backfire, resulting in hostility toward government
Outcomes	Worse policy decision if strongly influenced by opposing interest groups	Loss of decision-making control Possibility of poor decision that is politically cannot be ignored Less budget and resources for actual implementation

Source: Irvin and Stansbury (2004)

In their study using focus groups, King et al. (1998) found that barriers to authentic participation include lack of interest from younger citizens, lack of formal and informal education on citizen participation, administrative processes, lack of information, and the techniques of participation. The authors recommend a three-pronged approach for moving toward authentic participation including 1) empowering and educating citizens 2) re-educating administrators, and 3) enabling administrative structures and processes. This strategy addresses all three components of public participation, i.e. the administrative structures and processes, the administrators, and the citizens, to overcome barriers to authentic participation.

Participation aims to develop processes of inclusion, although Cornwall (2008) mentioned the challenge of self-exclusion. Non-participation can be due to an inability

to take part because of work, timing and duration of activities, and family commitments. Self-exclusion is an active choice not to participate that can result from a lack of confidence, fear of reprisals, feelings of having nothing to contribute or lack of benefit to participating. Reasons for non-participation should be considered in order to facilitate representation of diverse groups of citizens.

In the face of numerous challenges of participation practice, Innes and Booher (2004) proposed reframing participation to be more collaborative, focusing on dialogue and interaction in a multi-dimensional model that incorporates more stakeholders. They argue that collaborative processes promote authentic dialogue, the building of networks, and institutional capacity. However, the authors acknowledged that collaborative participation is an ideal that can never be fully achieved, but can reduce the dilemmas of participation practice.

Inclusion of public participation in the fields of environment and development has become a normative goal. The practice of participation varies greatly depending on the context, scale, purpose, and participants. These variables make the participatory process and its outcomes are difficult to compare and assess, although best practices are offered based to improve implementation of participation. Many of the benefits of the participation process may not immediately realized for they can support social goals and lay foundations of trust and understanding for further collaboration. Improved education and capacity building for citizens as well as supporting policy can facilitate progress effective participation in decision-making. For these reasons, investment in youth participation can be an instrumental strategy for preparing citizens with the knowledge and skill for participation.

2.3 Youth

'Youth' is often defined as a period of transition between childhood and adulthood. There is no agreement about what is meant by the term 'youth' since definition of youth and the age definitions differ from one culture to another (Mokwena, 2006; UN, 2009). The UN General Assembly defines youth as being between the ages of 15 and 24 (UN, 1995). This definition overlaps with the UN definition of the child, which is an individual under the age of 18. While these boundaries are useful for statistical

consistency, the transition from into social independence and employment may differ and some definitions of youth extend to 30 or 35 years of age. Part of this transitional period includes the process of obtaining status as a fully operational citizen with the capacity to function in political processes such as voting. For this study, the terms youth and young people refers to individuals between the ages of 15 and 24.

Youth are not a homogeneous group since their socioeconomic, cultural, educational, and geographic situations vary greatly. The diversity among youth in terms of social class, education, life experiences, gender, culture, and religion makes it difficult to generalize about them as a group.

Youth should be viewed as competent citizens and as resources with the potential to be agents of change. As stated in the United Nations Convention on the Rights of the Child (CRC) Article 12 (respect for the views of the child), Article 13 (freedom of expression) and Article 29 (goals of education), young people have the right to be involved in making decisions that affect their lives, such as economic, social, and environmental issues (Mackey, 2012; Matthews, Limb and Taylor, 1999; UN, 1989a). Research shows that respecting the child's right to know and be part of discussions and possible solutions to social and environmental issues is important and helps develop confident citizens (Mackey, 2012). These rights ensure children have opportunities to express their opinions, engage in political and decision-making processes. Despite these rights, young people are rarely permitted to voice their concerns in discussions about their futures as participation is primarily adult-dominated (Matthews et al., 1999).

The World Programme of Action for Youth (WPAY), adopted by the UN General Assembly in 1995 and expanded upon in 2007, provides a policy framework and guidelines to improve the situation of young people. It recognizes "young people in all countries are both a major human resource for development and key agents for social change, economic development and technological innovation" and strives to "strengthen national capacities in the field of youth and to increase the quality and quantity of opportunities available to young people for full, effective, and constructive participation in society" (UN, 1995, p. 4). The WPAY identifies ten priority areas for action including, education, hunger and poverty, health, environment, and participation.

Youth mainstreaming aims to ensure that youth, an often excluded sector of society, play an integral part in shaping the nature of society through its different organizations and institutions based on the needs and interests of young people (Mokwena, 2006).

2.3.1 Youth Participation

Youth participation in civil society is increasingly recognized to be an important objective for development and building democratic practices. The term ‘participation’ can have different meanings in various contexts. O'Donogue, Kirshner and McLaughlin (2003) classified youth participation into three themes: 1) access to social, political, and economic spheres, 2) decision-making within organizations that influence one’s life, and 3) planning and involvement in public action. The working definition of youth participation for the purposes of this study is *a process where young people are involved, as active citizens, in expressing views on and influencing decision-making on issues that affect them.*

While Rajani (2001) offered different meanings of adolescent participation as follows:

> Seeking information, forming views, expressing ideas
>
> Taking part in activities and processes
>
> Playing different roles includes listening, reflecting, researching, speaking
>
> Being informed and consulted in decision-making
>
> Initiating ideas, processes, proposals, projects
>
> Analyzing situations and making choices
>
> Respecting others and being treated with dignity. (p. 11)

Youth participation can occur in many settings, including the family, educational institutions, community and workplace, and various levels, from local to national to global. Youth councils are a structure that facilitates youth participation in decision-making in government at various levels, schools, non-governmental organizations, and global forums. The benefits of youth participation are often touted, focusing primarily on individual-level outcomes to cognitive, academic, and social benefits. Research on

youth development has shifted their focus from examining individual-level outcomes and skill building to exploring organizational and community-level outcomes of youth participation (O'Donogue et al., 2003).

Youth, as a social group, have traditionally been underrepresented in decision-making processes and offer few opportunities to have their voices heard in issues that concern them. Youth participation has been limited and often consists of one-time consultations that do not significantly affect policy decisions. The tokenistic treatment of youth participation does not realize the potential of youth as assets with valuable contributions to society. Much of the work on youth engagement and participation concerns youth in community-based or nongovernmental organizations, with limited work on youth participation in public institutions (O'Donogue et al., 2003). While youth policy and youth representatives have provided channels for youth participation, the vast majority of the youth population remains unaffected and their voice remains unheard.

According to the Department for International Development (DFID) (2010) the practice of youth participation, adapted from Bhatnagar and Williams (1992), encompassed:

> Information-sharing: people are informed in order to facilitate collective and individual action
>
> Consultation: people are consulted and interact with an organization, which can take account of their feedback
>
> Decision-making: people have this role, which may be theirs or joint with others, on specific issues of a policy or project
>
> Initiating action: people are proactive and able to take the initiative. (p. 11)

As a process involving young people in the institutions and decisions that affect their lives, youth participation can vary greatly in its form, purposes and strategies (Checkoway and Gutierrez, 2006; Rajani, 2001; O'Donogue et al., 2003). Youth participation extends beyond political or civic engagement to the empowerment of youth to build their capabilities as citizen in a democracy. When young people are empowered, rather than having passive roles in adult-dominated activities, they develop personal and social competencies as they practice their rights as citizens within a

democratic society (Checkoway, 2011). Broadly, youth participation seeks to develop effective channels of cooperation and information exchanges between youth, their governments and key decision makers.

2.3.2 Types of Youth Participation

From the previous discussion of participation, Arnstein (1969) viewed citizen participation as a ladder in which each rung corresponds to people's power in relation to traditional powerholders. Hart (1992) constructed a similar ladder of participation for children as shown in Table 2.6. The three lowest levels of participation, namely manipulation, decoration, and tokenism, are considered non-participation where children's roles are limited. For the next five levels of participation, including assigned but informed, consulted and informed, adult-initiated, shared decisions with children, child-initiated, and directed and child-initiated, shared decisions with adults, children are increasing involved and given responsibilities. Hart argued that young people are seldom taken seriously and given opportunities for participation by governmental processes in matters affecting their own interests.

Table 2.6 Hart's Ladder of Children's Participation

Youth-initiated, shared decisions with adults	Degrees of Participation
Youth-initiated and directed	
Adult-initiated, shared decisions with youth	
Consulted and informed	
Assigned but informed	
Tokenism	Non-Participation
Decoration	
Manipulation	

Source: adapted from Hart (1992)

Hart's 'ladder of participation' is one of the most influential models in the field of children's participation. It provides framework for encouraging governments and programs to drive youth participation towards 'higher' forms of project design and management, but may not allow for more informal participation in community life and

the construction of shared experiences (Head, 2011; Vromen and Collin, 2010). The IAP2 categorization of informing, consulting, involving, collaborating and empowering can be applied to youth in a situational approach. Shier (2001) offered an alternative model which identifies five levels of participation in which young people are listened to, supported in expressing their views, have their views taken into account, involved in decision-making processes, and share power and responsibility for decision-making. The IAP2 and Shier's typologies both exclude the lowest three levels of non-participation from Hart's model, as these are recognized as false types of participation.

2.3.3 Youth as Competent citizens

Youth participation should not be measured only by its scope, such as the number of people involved, but also by its quality, or the real influence that youth have on a process or decision (Checkoway, 2011; Checkoway and Gutierrez, 2006). Practical involvement of young people is more apparent in local-level activities and many innovative practices have developed from the non-government sector (Head, 2011). A study of youth policies in the European Union found that most municipal authorities view youth participation as a technical tool for shaping youth policy, rather than valuing the process itself (Timmerman, 2009). Participation studies often attempt to evaluate the effects of participation on individual level outcomes, such as knowledge, skills, and well-being (Youniss, Bales, Christmas-Best et al., 2002), but measuring effects at the community or societal level is more problematic (Checkoway, 2011).

Figure 2.2 Three-lens approach to youth participation.

Source: DFID (2010) adapted from World Bank (2007)

Young people are competent citizens and is consistent with the view of “youth as resources” in contrast to the view of youth as problematic, passive recipients of services (Checkoway, 2011; Checkoway and Gutierrez, 2006; Finn and Checkoway, 1998; Mokwena, 2006). Viewing young people as competent citizens with the right to participate and a responsibility to serve their communities, this perspective encourages and promotes the development of young people’s strengths through civic engagement and capacity building. The World Bank Development Report (2007) introduced the three-lens approach to youth participation (Figure 2.2) in which youth can be viewed as target groups, collaborators, and initiators. Depending on how youth are viewed, they can be engaged as beneficiaries, partners, or leaders on a continuum of increasing youth participation. The three lenses are not mutually exclusive and youth participation can be a combination of all three or vary depending on the context. The ultimate goal of this approach is the capacity building of youth as partners and leaders in development.

Most youth programs designed to improve positive and civic development focus on personal, cognitive, and social skills instead of looking to challenge the status quo and create equitable societies through social transformation (Evans and Prilleltensky, 2007; Mokwena, 2006; Watts and Flanagan, 2007). Evans and Prilleltensky argued that by supporting young people in building their skills and capabilities in ways that address harmful conditions, youth can act as agents of change in creating just communities. Moreover, as young people and adults work together in their communities, they recognize each other as resources, learn form one another and expand opportunities for participation (Finn and Checkoway, 1998).

2.3.4 Expanding Youth Participation

Promoting effective participation can be visualized using the adolescent participation framework provided by Rajani (2001) as shown in Figure 2.3. The diagram summarizes have adolescents, young people aged 10-19 years, have the capabilities, opportunities and supportive environments needed to participate meaningfully in as large a space as possible along the four axes. The four axes correspond to roles, levels of participation, institutional settings, and geographical settings. The capacity of adolescents to participate increases as the level of participation along each axis extends farther from

the center. This concept can be applied to the category of youth as Rajani's discussions of adolescent participation overlaps and parallels discussions and concepts of youth participation.

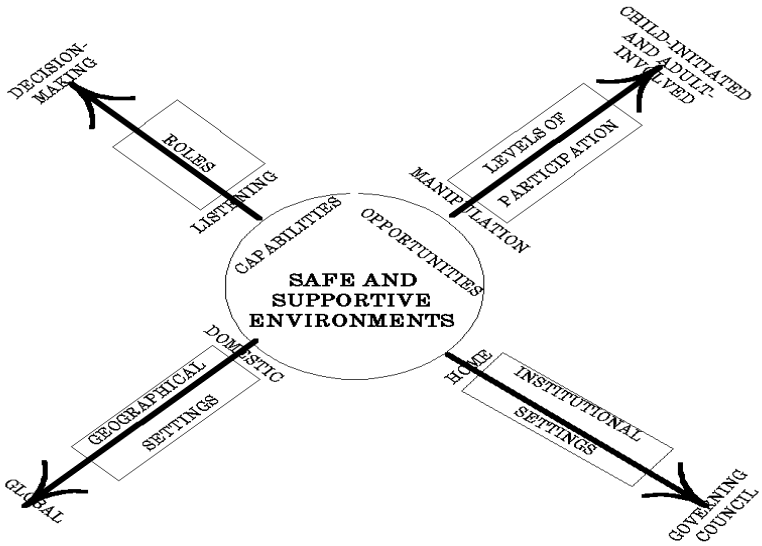

Figure 2.3 Framework for promoting meaningful adolescent participation.

Source: Rajani (2001)

In contrast, the 'Pathways to Participation' model proposed by Shier (2001) elaborated that within each level of participation there were differing stages of commitment to the process of empowering young people by means of openings, opportunities, and obligations (Figure 2.4). In the first stage, an opening is when a worker or organization expresses interest or makes a statement of intention to work in a certain way. In the second stage, the opportunity occurs when the needs of various resources, skills, knowledge, and procedures are met to put the intent into practice. In the last stage, an obligation is created when the organization makes a policy that requires staff to operate in a particular manner and becomes built-in to the system. Shier offered a set of questions to aid organizations identify their current practices and areas they can improve to progress to higher levels of participation. Recognizing that participation is a process rather than a specific event or project, Shier's model is a useful tool for assessing organizational readiness and commitment to youth participation.

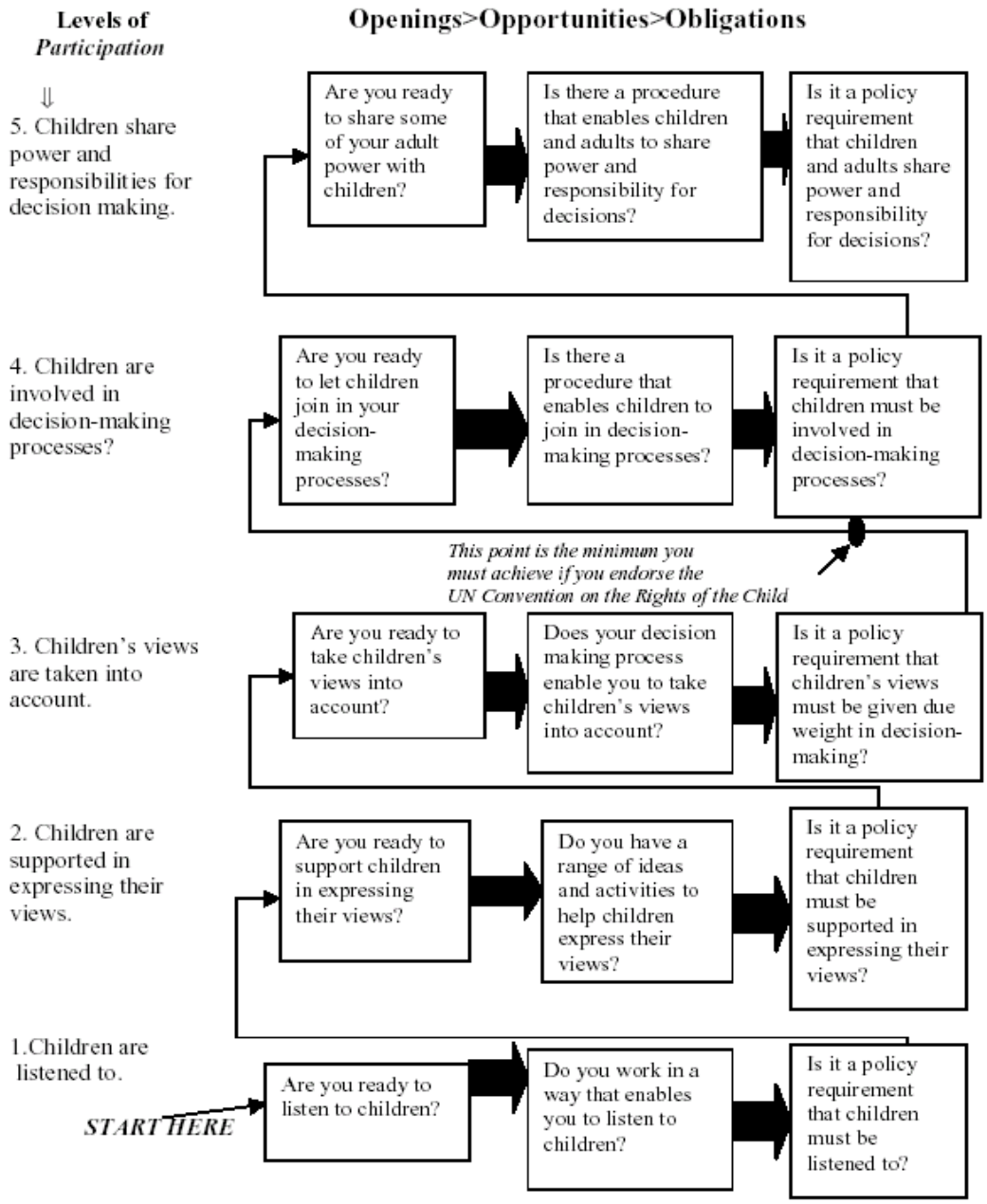

Figure 2.4 Shier's Pathways to Participation.

Source: Shier (2001)

Watts and Flanagan (2007) offered a framework on youth activism as shown in Figure 2.5. This framework comprises of four components: 1) worldview and social analysis, of which critical consciousness is a central part, 2) sense of agency, which is empowerment and efficacy (self, collective, political), 3) opportunity structure, which takes into account the resources available to shape and permit action based on one's analysis, and 4) societal involvement behavior (Watts and Flanagan, 2007). The

principal outcome of interest, or societal involvement behavior, can be community service, civic engagement, or sociopolitical activism. Similar to Rajani, Watts and Flanagan included the element of opportunity as a factor to societal involvement, while Rajani viewed opportunity as a fundamental element or prerequisite to effective participation.

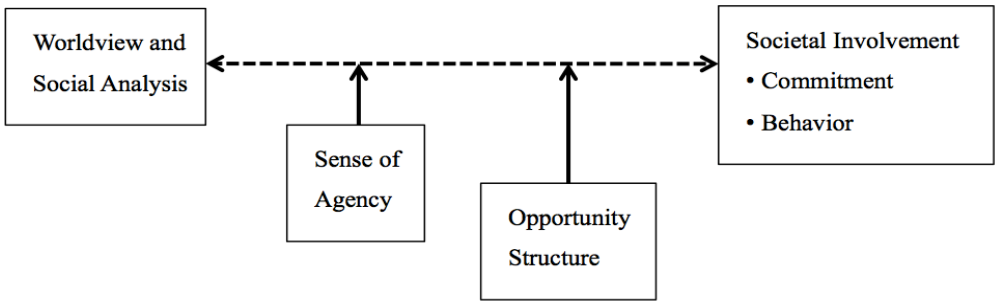

Figure 2.5 Potential moderators in a theory of sociopolitical development.

Source: Watts and Flanagan (2007)

Providing all young people with opportunities to participate in decision-making processes supports their full inclusion in society. As young people experience the benefits of meaningful participation, they are more likely to participate in other areas of society throughout their lives (Mokwena, 2006; Obradović and Maten, 2007). Opportunities for meaningful youth participation can be created by promoting youth organizations, youth forums, youth councils, youth parliaments, training in youth participation, informing youth, use of information and communication technologies, encouraging volunteering and community service, and promoting youth presences in international forum and conferences (UNESCO, 2004). In a study of motivational changes and engagement in youth participating in various programs, youth reported developing a connection to the activities that provided learning for the future, development of competences and pursuit of a purpose (Dawes and Larson, 2011). Opportunities and diverse channels should exist for participation that motivates and engages the concerns of all youth populations.

2.3.5 Obstacles to Youth Participation

While there is increasing interest in youth participation, there are many barriers to authentic inclusion of young people in practice. Youth participation often remains at a superficial level, in the sense that young people are often included in one-time discussions and their contributions have limited effect on policy decisions. The primary obstacle to meaningful youth participation in adult-led organizations and institutions is adults refusal to share power with youth and the belief that youth are not capable and responsible partners (Mokwena, 2006).

From their study of Australian youth, Vromen and Collin (2010) concur that while decision makers preferred a top-down, participation formal approach, youth stressed the need for informal methods that were more appealing and less intimidating. A study on youth participation in Maharashtra, India investigated factors related to prosocial values, involvement in civil society, and political life found that opportunities for youth participation was limited (Acharya, Singh, Santhya et al., 2010). A study by Hartas (2011) found that youth who are categorized as disaffected recognized constraints to participation in formal school processes and desired hybridized, informal participation that enabled them to have voice. By not enabling and engaging youth appropriately, what is missed is the opportunity to develop young people who have the skills to participate effectively, instead of waiting until they are adults.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Young people are limited in their ability to create change, whether by their lack of interest or belief in their ability to do so, or lack of skill or resources to implement their actions (Checkoway, 2011). Youth who are knowledgeable and confident are more likely to be involved whereas less informed or vulnerable groups may be overlooked. Checkoway (2011) attested that studies show that most young people are uninvolved or minimally involved in public affairs and that most active participants are not representative of the general population. The active, informed, and voluntary involvement of youth in decision-making, both locally and globally, is imperative to allow young people to have their voices meaningfully heard on issues, such as climate change and sustainable development.

2.4 Youth and Sustainable Development

Youth are considered as a key stakeholder for sustainable development. Education is a crucial tool in raising awareness on global issues and promoting behavior change among youth. Educating and empowering the next generation of stewards, decision makers, and community leaders can be achieved through respecting and engaging youth as active and capable citizens of today. Youth participation enhances sustainability by involving people in decision-making and action, which supports a sense of ownership and motivation to sustain it.

Revisiting the definition of sustainable development as "development that meets the needs of the present without compromising the needs of future generations" (WCED, 1987, para. 1), there is an element of intergenerational equity for the unborn generations who cannot voice their concerns and desires. The youth of today represent this intergenerational aspect of sustainable development that provides a voice for the next generation of citizens.

2.4.1 Youth Participation in Sustainable Development

Following the Rio Earth Summit in 1992, the Rio Declaration provided guiding principles for sustainable development. Governments cannot achieve sustainable development without cooperation from other sectors of society. Principle 10 of the Rio Declaration promoted public participation of civil society in environmental decision-making. The benefits of youth is affirmed in Principle 21 of Rio Declaration and asserts that "The creativity, ideals and courage of the youth of the world should be mobilized to forage a global partnership in order to achieve sustainable development and ensure a better future for all" (UNCED, 1992b, p. 4).

The outcome document of the Rio Earth Summit, *Agenda 21*, recognized nine sectors of society through which citizens can participate in international efforts towards sustainable development within the UN. These nine sectors are known as the 'major groups'. Within this framework, governments have committed to work more closely with major groups and other stakeholders and to encourage their involvement in contributing to sustainable development policies and programs.

According to *Agenda 21*, "The involvement of today's youth in environment and development decision-making and in the implementation of programmes is critical to the long-term success of Agenda 21" (UNCED, 1992a, para. 25.1). It is further elaborated that:

> It is imperative that youth from all parts of the world participate actively in all relevant levels of decision-making processes because it affects their lives today and has implications for their futures. In addition to their intellectual contribution and their ability to mobilize support, they bring unique perspectives that need to be taken into account. (UNCED, 1992a, para. 25.2)

This justification for youth involvement in decision-making processes highlights the right of youth to participate as well as their valuable contributions. To facilitate youth participation and be more responsive to youth issues, *Agenda 21* tasks governments to:

> Establish task forces that include youth and youth non-governmental organizations to develop educational and awareness programmes specifically targeted to the youth population on critical issues pertaining to youth. These task forces should use formal and non-formal educational methods to reach a maximum audience. National and local media, non-governmental organizations, businesses and other organizations should assist in these task forces. (UNCED, 1992a, para. 25.9f)

To encourage the involvement of young people and children in environment and development issues, United Nations Children's Fund (UNICEF), UNESCO, United Nations Development Programme (UNDP), and non-governmental organizations were recommended to develop support programs, such as children's and youth hearings and building on decisions of the World Summit for Children.

In 1992, the United Nations Commission on Sustainable Development (CSD) was mandated to follow-up and report on implementations of the agreements from the Earth Summit. The Major Group on Children and Youth (MGCY), or Youth Caucus, is the main channel for young people to participate in the UN negotiations related to sustainable development. The vision of the MGCY is to advance participation of young

people in all levels – local, national, regional, and international – in the protection of the environment and the promotion of economic and social development (Rioplustwenties, 2011). The MGCY attempts to prepare its members by holding youth-specific workshops and activities, providing mentorship and other support, such as providing youth-friendly guides.

Twenty years later, at Rio+20, many of the same principles and recommendations from the Rio Earth Summit regarding youth and their importance to sustainable development were reaffirmed in *The Future We Want*:

> We stress the importance of the active participation of young people in decision-making processes as the issues we are addressing have a deep impact on present and future generations, and as the contribution of children and youth is vital to the achievement of sustainable development. We also recognize the need to promote intergenerational dialogue and solidarity by recognizing their views. (United Nations General Assembly, 2012, p. 8)

While *Agenda 21* and *The Future We Want* provide a range of objectives and activities for youth and other stakeholders to be involved in decision-making and sustainable development, action and implementation of this policy is lacking. Youth, a traditionally excluded group, have been provided more opportunities to be represented and express their views at international negotiations and councils. However, the extent of influence that youth have on various decision-making processes at international, regional, national, and local levels remains nominal.

2.4.2 Learning for Sustainable Development

The UN Decade of Education for Sustainable Development (2005-2014) promotes the integration of principles, values, and practices of sustainable development in education. ESD is based on five pillars: learning to know, learning to be, learning to live together, learning to do, and learning to transform oneself and society (Delores, 1996). This strategy seeks to instill the knowledge, skills, and values needed for citizens to improve their quality of life for a sustainable future. Education is an effective tool for addressing various issues related to sustainable development including environmental education,

peace education, climate change education, sustainable consumption, and citizenship. While ESD is the terminology used most often in UN documents, many terms are used almost synonymously including education for sustainability, education for a sustainable future, environmental and sustainability education, and sustainability education.

Fostering skills for action and participation to empower individuals to influence environmental governance should be a goal of environmental education and ESD (Levy and Zint, 2012). Jensen and Schnack (1997) endorsed action competence, an educational ideal, where "students capable of envisioning alternative ways of development and to be able to participate in acting according to these objectives" (p. 164) since social and structural changes are need to solve environmental problems. In relation to ESD, Mogensen and Schnack (2010) stated that action competence means building "the students' ability, motivation, and desire to play an active role in finding democratic solutions to problems and issues connected to sustainable development" (p. 68). Berkowitz, Ford and Brewer (2005) proposed that civics literacy, the understanding of social systems and skills need to participate in society, and self-efficacy, the capacity to learn and act based on personal values and interest, as two of five key components in their framework for environmental citizenship. Levy and Zint (2012) supported the development of skills for environmental political participation. From their review, they identified political efficacy, or belief that an individual's actions can influence political processes, and political interest as strong predictors of political participation that can be fostered through education and involvement in political processes. Additionally, the authors proposed a theoretical framework of factors that influence environmental political participation for further research as shown in Figure 2.6.

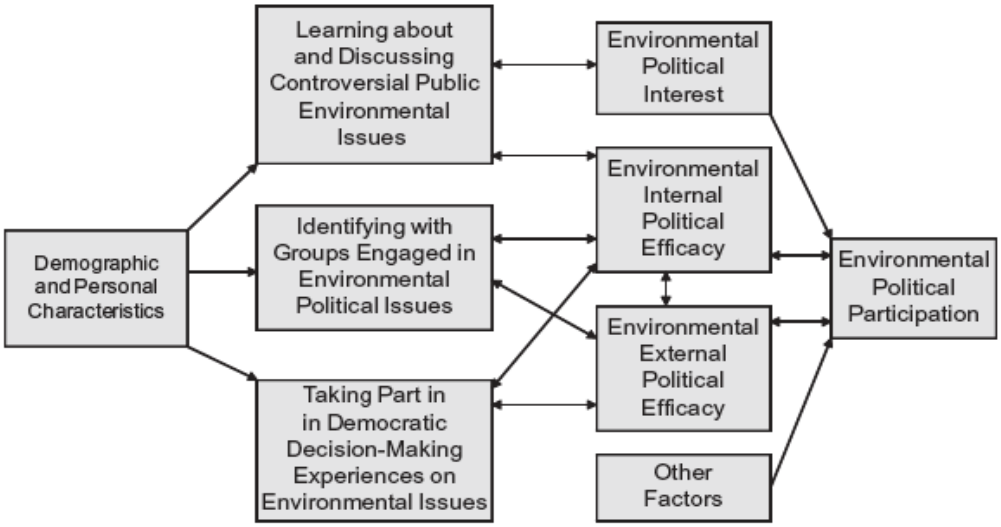

Figure 2.6 Hypothesized factors related to environmental political participation.

Source: Levy and Zint (2012)

In regards to youth, many studies attempt to measure knowledge, attitudes, and behaviors concerning sustainable development. The level of awareness of the concept of sustainable development among secondary students in Malaysia was measured using a questionnaire with a five-point Likert scale (Hassan, Noordin and Sulaiman, 2010). While Michalos and colleagues attempt to develop standardized measures of knowledge, attitudes, and behaviors concerning sustainable development in order to construct baselines and assess outcomes of education for sustainable development (Michalos, Creech, Swayze et al., 2011; Michalos, Creech, McDonald et al., 2010). In a study of 14 and 15 year old English students understanding of sustainable development over the course of one year, Walshe (2013) found that the students were better able to explain the tensions in sustainable development, although they tended to focus on environmental perspectives, and more able to relate sustainability to their own lives.

Youth can contribute to sustainable community development as they participate as citizens in everyday activities. Cotton and Alcock (2012) found that informal learning activities on university campuses may impact students' awareness about sustainability. Youth can take roles as leaders in community-based projects and campaigns, community researchers, peer and community educators through various opportunities

to engage in action within and outside of school and with the respect and support of adults (Percy-Smith and Burns, 2012). A study in the United Kingdom by Charnley, Fleming, Dowsett et al. (2010) showed that non-formal learning and real-life context of designing low-energy school buildings provided young people with the awareness and capacity to engage with decision makers, designers, and engineers. Learning for sustainable development can be more meaningful and relevant for young people when they can participate in real-life, decision-making processes.

Youth need to be empowered to engage in sustainable development. Not only do they need to develop the interests and motivation in the issues, they also need to practice the skills and competencies needed for participation. Youth should be taught how to become active citizens in a democratic society and develop the competencies required to be capable, willing, and qualified participants in sustainable development.

2.5 Youth and Climate Change

Young people are concerned about the unprecedented threats posed by global climate change and many are already experiencing its impacts. Therefore, young people not only have a right to participate in responding to climate change, they also have a need to be involved since climate change is a defining issue of their lives and futures. Although young people are increasingly viewed as valuable assets in responding to climate change, they have been relatively absent in the climate change policies and plans formulated by many countries. These policies and frameworks seek to support countries in reducing risk and vulnerabilities posed by climate change, and to educate and empower people to take action. Genuine participation of young people in responding to climate change are lacking as programs are still designed for them, rather than engaging them as partners (Selby and Kagawa, 2010). There is a gap between the stated need to educate and involve youth in climate change policies and programs with actual implementation at the national and local levels, especially in developing countries.

2.5.1 Youth Understanding of Climate Change

Climate change differs from other environmental issues because of issues of scale, uncertainty and complexity, as well as temporal delays and ethical considerations (IPCC, 2007). Beyond the biophysical complexities, climate change is also linked to the problem of inequity between developed and developing countries as developing countries are predicted to bear the burden of climate change impacts and are less prepared to meet these challenges. There are many psychological, human-evolutionary, social-ecological processes that impede individuals' ability to notice or respond to climate impacts (e.g. mitigation and adaptation behaviors) that may pose challenges to the learning process (Brownlee, Powell and Hallo, 2013). In particular, the temporal and spatial dimensions of climate change make it difficult for individuals to overcome short-term thinking and understand issues of broader scale. Due to the importance of understanding an audience's beliefs and attitudes towards climate change in the educational process, Brownlee et al. (2013) suggested the use of focus groups, targeted interviews and quantitative surveys to determine the audience's specific opinions regarding climate change.

Many studies try to evaluate what students understand about climate science and climate change (Shepardson, Niyogi, Roychoudhury et al., 2012; Shepardson, Niyogi, Choi et al., 2010; Shepardson, Niyogi, Choi et al., 2009; Pruneau, Liboiron, Vrain et al., 2001). These studies show that students have various misconceptions and deficiencies in their knowledge of climate change, such as having difficulty differentiating between climate and weather, and failing to see the impact of climate change other than increasing temperatures, and confusing issues of ozone layer depletion with global warming. Addressing common student misconceptions about climate change and focusing on how students' can engage in actions to limit their personal impact on climate change can help support students' critical science agency, or ability to use scientific knowledge to take action on an individual or community level (McNeill and Vaughn, 2010; Schreiner, Henriksen and Kirkeby Hansen, 2005). The combination of teaching climate science and developing critical thinking and analysis skills can help develop an informed citizenry capable of reviewing available information and taking appropriate action.

Research in environmental attitudes and knowledge suggests no strong link between a person's environmental attitudes and knowledge and his or her willingness to engage in pro-environmental issues. It has been acknowledged that there is often a 'gap' between knowledge and action (Kollmuss and Agyeman, 2002). In relation to climate change, Boyes and Stanisstreet (2012) used survey methods to relate student's attitudes and beliefs about the usefulness of specific actions and their willingness to adopt them in the context of global warming and carbon emissions. The survey found that two-thirds of the students believed global warming was a real phenomenon and about half expressed concerns about the consequences of global warming. The findings showed that female students tend to be more willing to engage in pro-environmental actions and that older secondary students might respond more to teaching compare to younger students in terms of behavior change. A similar study done on Greek secondary students revealed that students were aware of reducing carbon emissions by reducing personal transport, using renewable energy, and planting trees, but less knowledgeable about the less direct effects of meat production and material consumption (Malandrakis, Boyes and Stanisstreet, 2011). In a study of youth, Ojala (2012) found that lack of hope or pessimism about climate change can result in a lack of action. The knowledge-action gap poses a key challenge to behavioral responses to climate change despite growing knowledge and awareness.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

2.5.2 Climate Change Education

The role of education in negotiating the challenges of climate change is increasingly recognized. The area of climate change education (CCE) is relatively new and still in its infancy. It is often regarded as part of science education as a component of geography and earth science. Climate change education is also part of the multitude of disciplines included under Education for Sustainable Development (ESD).

While CCE may involve new curriculum inputs, the key challenge is to determine how quality education can prepare people for drastically different futures and the capacities to address rapid change and uncertainty (Bangay and Blum, 2010). There can be a focus on education for behavior, such as mitigation behaviors that promote individual action to reduce carbon emissions. CCE can also involve climate change adaptation, such as

enhancing adaptive capacity, reducing vulnerabilities, disaster risk reduction and preparation in schools and communities (Anderson, 2010). In order to be effective, Bangay and Blum (2010) offered three main components for reorienting education to address climate change: 1) knowledge of climate change and wider problems, 2) knowledge of local environmental conditions and associated risks, and 3) disaster risk reduction (DRR). Without coordinated climate change education in the education system, the main source of information about climate change for young people is mass media (Schreiner et al., 2005).

CCE is often addressed within the science curriculum and limited to knowledge and understanding of climate change science. McKeown and Hopkins (2010) suggested six components for climate change education that goes beyond climate science and educates for change: issue analysis, community and personal decision-making, political processes, social justice, inter-cultural sensitivity and inter-cultural competence, and behavior change. There should be time for discussions of scientific, political, and ethical issues related to climate change and can be included in social sciences and humanities curriculum. Some of these discussion can confront denial and despair related to climate change as well as combat consumerisms and ideals of the 'good life' (Selby and Kagawa, 2010). Pruneau, Khattabi and Demers (2010) advocated the need for a place-based understanding of climate change education that includes community knowledge, resources, and processes that facilitate adaptation. For CCE to be relevant, it has to relate global and abstract issues to how humans in general impact climate change and to equip learners with the requisite skills, knowledge, values, and competencies to deal with future challenges.

Schreiner et al. (2005) viewed empowerment as a prerequisite for action on climate change that combines cognitive resources, such as knowledge and skills, with affective resources, such as motivation, hope, and vision. The authors suggested that a person who is empowered to respond to the climate change issue is:

1. Motivated for action towards the climate program
    a. Has hope and visions for the future
    b. Has a general feeling that s/he can influence the future

   c. Is interested and engaged in the climate issue and thinks that environmental protection is important for society
2. Has sufficient knowledge about
   a. The science of climate change
   b. Possible actions in terms of personal lifestyle, technical solutions, and political measures
   c. Possible channels of influence through politics, organizations, etc.(p. 8).

CCE is a new field under the broader category of education for sustainable development. CCE that empowers young people considers environmental, social, economic, and scientific in a holistic manner. Integration of CCE into educational plans and policies are necessary to invoke change in programs, teacher training, practices, and learning (UNESCO-UNEP, 2011). As climate change becomes a larger threat to sustainable development of countries around the world, CCE can better prepare young people for unpredictable futures.

2.5.3 Youth Participation in the UNFCCC

Youth have been active participants in the UNFCCC process since the Rio Earth Summit in 1992. Youth have been recognized as an official civil society constituency as 'YOUNGO' in 2009. Article 6 of the UNFCCC directs countries to consider education, training, and public awareness as integral to responses to climate change. Recognizing that climate change and related climate policy will have lasting implications for youth, Article 6 specifically promotes the inclusion of climate change in school curricula and seeks youth input and participation in the formulation of efforts to address climate change. Youth participation in the UNFCCC process serves as a reminder to the impact of the decisions on youth and future generations.

Increasingly, country plans are including education specific components, but the extent and success of these plans is yet to be determined. Areas that could be covered include how people can prevent and lessen climate change (mitigation) and deal with its impacts (adaptation) as well as what do in the case of disasters. Publications and informational materials, such as *Enhanced Youth Participation and Education in Climate Change (2011), Youth Participation in the UNFCC Negotiation Process (2010), Growing*

Together in a Changing Climate (2009) and various YOUNGO reports, highlight the importance of youth voice and engagement in climate change negotiations. Through Article 6 of the UNFCCC, climate change education and youth participation in decisions about climate change are mandated for implementation at national levels.

2.5.4 Youth Participation in Responding to Climate Change

Climate change exacerbates existing vulnerabilities of young people. For children, climate change may contribute to rising water scarcity, declining food security, and increasing disasters and disease risks. A study by UNICEF found that children's specific vulnerabilities and risks need to be addressed through adaptation strategies and low-carbon development plans (Lawler and Patel, 2012). The study revealed that the types of climate risks children faced are diverse, ranging from direct physical impacts, such as cyclones, storms, and extreme temperatures, to impacts on their education, psychological stress and nutritional challenges. Children and youth were shown to be strong advocates and capable of playing integral roles in helping their families, schools, and communities adapt and find solutions to climate change. The research findings encourage the mainstreaming of climate change into policy documents relating to children in order to support a coordinated multi-sectoral effort to address the impacts of climate change on children (Lawler and Patel, 2012). Research involving youth leads to a more knowledgeable youth population that is less susceptible to the socioeconomic and psychological impacts of climate change.

Dealing with the climate problem requires the participation of present and future citizens in making ethically founded and knowledge-based decisions. Youth can play a role in informing and educating other youth, sharing information and building capacity, campaigning, lobbying and advocacy, engaging in consultations, leading initiatives, and participating in policy development and decision-making (UN, 2010). Due to the intergenerational nature of climate change, vocal participation of young people is required to adapt and build resilience to climate change risks for future generations (Lawler and Patel, 2012). Scientific knowledge about climate change has not resulted in policy, legislation or behavior changes that are needed bring about societal change.

Education that includes opportunities for in-depth learning and participation is essential for transformational changes to occur.

Through her Young Voices on Climate Change project, Cherry (2011) showcased how young people are expressing their concerns on climate change and acting to reduce carbon emissions in their schools and communities. The role of lifestyles in producing carbon emissions is often not addressed in educational materials and use of a personal greenhouse gas calculator can help young people realize that importance of attaining equitable and sustainable emission levels (Lenzen and Murray, 2001). A study of Inuit youth revealed that youth voices about their experiences, observations and perceptions of climatic and environmental change are valuable source for dialogue but are generally absent from published literature (Petrasek MacDonald, Harper, Cunsolo Willox et al., 2013). The voices of youth that are heard tend to be those from the "North" whereas those from the 'South' are often unheard (White, 2011). Everyone, not just primary and secondary school students, needs to be informed and empowered to make decisions in their personal and professional lives to reduce or adapt to climate change.

In the *Youth Strategy on Public Outreach* (1999) on climate change by the International Institute for Sustainable Development (IISD), Canadian youth identified capacity building as a key strategy since youth are concerned with developing skills and experience that will be meaningful for employment. Youth can acquire valuable experiences and leadership skills when given the opportunity to participate in decision-making processes at national and international levels. Thus, youth participation can be a powerful motivator for youth to become involved as well as building youth capacity to be leaders and citizens. An enabling environment of parents, teachers, community, government, private sector, media, and civil society is needed to provide the opportunities and support to develop the potential of youth as in responding to climate change.

Youth participation in responding to climate change in developing countries, or the 'South', often concentrate on the inclusion of youth in programs targeting DRR or climate change adaptation. Gaillard and Pangilinan (2010) described the use of participatory mapping activities for raising disaster risk awareness among youth in the

Philippines. The authors argued that participatory mapping is a cheap and easy way to make the concepts of hazard, vulnerability, and risk more tangible and concrete for youth, particularly in marginalized communities. Similarly, Haynes and Tanner (2015) recounted the use of youth-centered participatory video as a tool for empowering young people in DRR and climate change adaptation by increasing their capacity to inform decision-making processes, communicate risk and take positive action. The participatory video process helped to document and raise awareness of disaster risk in communities as well as providing a channel for youth to voice their concerns and advocate for change. Participatory mapping and video are strategies for strengthening youth capacity to participate in DRR and climate change adaptation activities that build community resilience.

2.5.5 Youth Participation in Responding to Climate Change in Thailand

The peer-reviewed literature on youth and climate change in Thailand is limited. One study provides insight on youth perceptions and awareness of global warming. Some publications related to disasters describe how young people are actively engaged in disaster risk reduction and climate change adaptation.

In their study on media information about global warming, Chokriensukchai and Tamang (2010) noted that Thai youths are not interested in watching documentary-style programs on global warming. Generally, Thai youth know about global warming but are not aware of its consequences and fail to adopt lifestyle activities that alleviate global warming. The authors recommended that environmental content be included in entertainment programs, presented by celebrities and teen idols, in order to increase awareness among youth. The study used the term “global warming”, reflecting the predominate use of the term in Thailand, instead of the term “climate change”.

Many initiatives to strength youth capacity in responding to disasters began after the 2004 Indian Ocean Tsunami that affected several provinces on the Andaman coast of Thailand. Save the Children’s DDR program evolved from tsunami affect provinces to disaster prone areas of Thailand. School programs worked to involve children in identifying risk and safe areas on community maps, read warning signs, practicing emergency procedures and helping to educate others in the community (Save the

Children, 2010). Several youths, aged 13-18 years old from Ayutthaya Province, were motivated to participate in the DDR and climate change adaptation activities to gain more knowledge and experience, encourage community participation, be a role model for the community, to be able to use the disaster knowledge, for self-protection of the community, and to build up unity among the community (United Nations Office for Disaster Risk Reduction [UNISDR] and Plan International, 2012).

Children learned that climate change and deforestation may be the cause of many disasters and became more aware of ways to reduce environmental impacts, such as reducing use of plastic, bringing own food carriers and cups to school, not cutting down trees, wetland preservation, reusing waste to make crafts, and building community awareness (Save the Children, 2010). By preparing and training children in schools and communities for disaster preparedness, young people can develop their capabilities to reduce risks and respond to disasters.

2.6 Climate Change in the Context of Sustainable Development

Climate change is a complex global problem that is interlinked with many issues, such as economic growth, environmental degradation, and poverty reduction. Improving living conditions and reducing poverty must remain developmental priorities in developing countries while simultaneously reducing carbon emissions and promoting resilience to climate change. The inherent complexities of climate change as a cross-cutting global crisis highlights the linkages between environment, society and economy. Climate change and sustainable development have generally been discussed in separate discourses, however there is greater recognition of the interrelated nature and potential synergies between these two issues (Cohen, Demerrit, Robinson et al., 1998; Robinson and Herbert, 2001; Robinson, Bradley, Busby et al., 2006; Swart, Robinson and Cohen, 2003).

The IPCC Fourth Assessment has identified linkages between climate change and sustainable development. Sustainable development is considered key to reducing vulnerability to climate change, while climate change is acknowledged to being a barrier to sustainable development (IPCC, 2007). The key driving forces for greenhouse gas emissions, such as population, economic growth, land use, and development path

of industrialized nations, are all linked to development issues (Metz, Berk, den Elzen et al., 2002). Robinson et al. (2006) suggested viewing climate change through a sustainable development lens in order to achieve climate change goals by following paths to sustainability. Both climate change and sustainable development require fundamental changes to development pathways driven by societal change.

Climate change is an example of what happens when the existing development pathway is not sustainable. The current paradigm of economic growth and carbon-based industrialization has resulted in anthropogenic climate change that threatens the entire biosphere. Designing national and regional development paths that consider climate change have the potential to aid in the transition to more sustainable development pathways. Frameworks for implementation of sustainable development, including *Agenda 21* and the JPOI, have existed for decades without significant progress. The global dilemma of climate change as an environmental and social challenge can act as a driver for greater progress towards sustainable development.

Swart et al. (2003) provided a framework for exploring the linkages between sustainable development and climate change policies. The authors argue that the close linkages between climate change and sustainable development means that addressing similar causes and impacts should have multiple benefits. Likewise, trade-offs would occur when undesirable effects can create more problems. Focusing on the linkages between climate change and sustainable development provides opportunities for policy to result in beneficial synergies and minimize trade-offs (Swart et al., 2003). The linkages between sustainable development, climate change, and policies in these areas are depicted in Figure 2.7.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

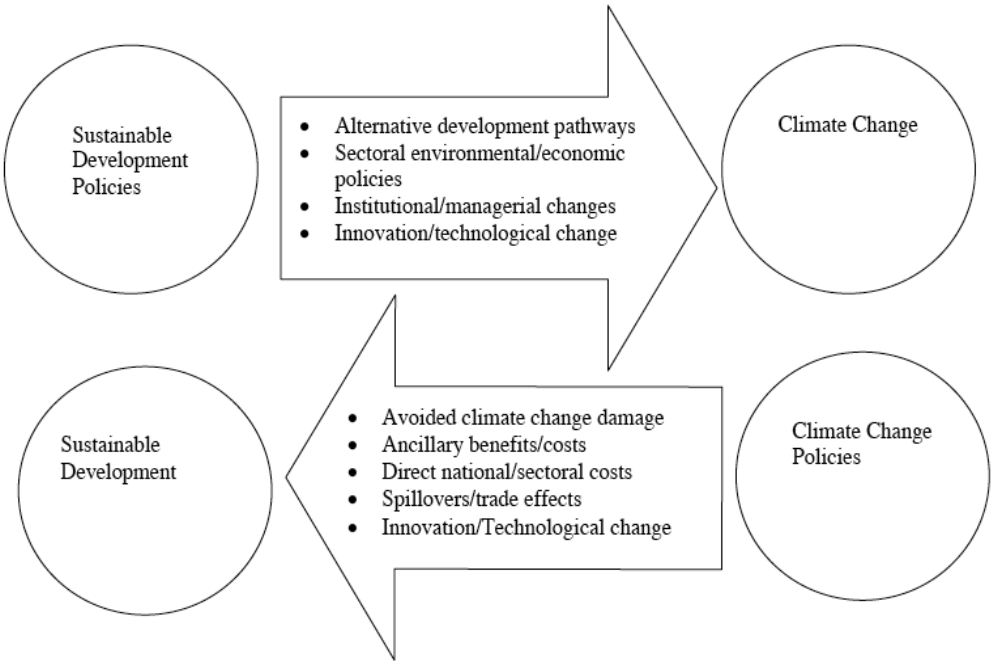

Figure 2.7 Linkages between sustainable development, climate change, and policies in these areas.

Source: Swart et al. (2003)

Examining climate change in the context of sustainable development extends beyond climate science and carbon emissions to consider ethical and social components, such as poverty and equity. The principles of sustainable development are reflected in the call upon the Parties of the UNFCCC to "protect the global climate system for the benefit of present and future generations of humankind on the basis of equity" (UNFCCC, 1992, p. 9).

Equity can separated into inter-generational equity and intra-generational equity. Inter-generational equity is explicitly stated in the desire to ensure the benefit of the climate system for future generations. This echoes the Brundtland definition of sustainable development. The concept of inter-generational equity validates the necessity for active involvement and participation of young people, which is considered in the next section.

The concept of intra-generational equity is relevant to sustainable development as vulnerable populations are more likely to bear the impacts of climate change. The *Future We Want* states that "all countries, particularly developing countries, are

vulnerable to the adverse impacts of climate change, and are already experiencing increased impacts including persistent drought and extreme weather events, sea level rise, coastal erosion, and ocean acidification, further threatening food security and effort to eradicate poverty and achieve sustainable development" (2012, p. 33). On a global level, developing countries are less to blame for emissions and more vulnerable to climate change than developed countries. Similarly, on a country level, more vulnerable groups and poor communities produce less carbon emissions but are less likely to be able to withstand climate impacts when they occur.

Beg, Morlot, Davidson et al. (2002) identified social dimensions of sustainability that raise equity concerns in the context of climate change: distribution of impacts to climate change, distribution of responsibilities, intergenerational dimensions, and access to participation. Developing countries are more vulnerable to climate change due to their dependence on agriculture and lower capacity and infrastructure to adapt. By addressing climate change at a local scale instead of a global one, climate change concerns can act as a catalyst for progress toward sustainable development (Wilbanks, 2003). There is potential to implement adaptation and mitigation measures into local sustainable development as there is greater opportunities for participation in actual responses to climate change (Bizikova, Robinson and Cohen, 2007). Sustainable development can help reduce vulnerabilities to climate change while addressing local developmental problems.

Aligning climate change and sustainable development has many challenges. A key barrier to effectively addressing and integrating climate change into sustainable development is the lack of coordination among policy-making and implementation agencies at global, national, and local levels (Beg et al., 2002). While synergies exist between climate change policies and sustainable development, further integration of strategies could result in a more cost-effective response to climate change (Beg et al., 2002; Najam, Rahman, Huq et al., 2003; Robinson et al., 2006; Robinson and Herbert, 2001; Swart et al., 2003). The realization of these synergies could take advantage of the issue of climate change to drive progress towards sustainable development.

2.6.1 Youth Participation in Responding to Climate change in the Context of Sustainable Development

The outcome document from Rio+20, *The Future We Want*, reaffirms that sustainable development requires the meaningful involvement and active participation of major groups, including youth, in decision-making, planning, and implementation of sustainable development policies and programs. In regards to youth, *The Future We Want* (2012) stated that "sustainable development must be inclusive and people-centered, benefiting and involving all people, including youth and children" (p. 5).

Sustainable development can help make climate change more tangible since policies and actions that are beneficial to sustainable development can be aligned with climate change responses. While negotiations on climate change focuses on the global level, the implementation of climate change and sustainable development responses will be at the national and sub-national level. The differential impact of climate change on countries and communities requires localized responses based on the local context, echoing the plan for implementation of *Agenda 21*. Ethical approaches to coping with climate change aimed at improving health or satisfying basic human needs can help focus attention on sustainable development patterns and solving concrete problems while driving solutions for climate change (UNESCO-UNEP, 2011). Responding to climate change offers an opportunity to address and prioritize sustainable development if the broader system of interdependent economic, social, and environmental forces is also considered.

Youth participation in responding to climate change in the context of sustainable development can help reorient development path to sustainability. A narrow consideration of climate change that is overly focused on scientific and technical aspects of climate change can ignore the economic and social forces behind them. In order to benefit both climate change and sustainable development, Robinson and Herbert (2001) proposed a strategy of resocialization to uncouple human well-being from economic consumption of goods and services. The International Alliance of Leading Education Institutes (IALEI) recommended that the education sector to use a comprehensive approach to ESD to drive radical changes in consumption, production,

and behavior to meet challenges of climate change and sustainable development (International Alliance of Leading Education Institutes [IALEI], 2009). Since carbon emissions are inherently linked with economic development and societal choices, education for sustainable development that includes climate change education, sustainable consumption, and sustainable lifestyles can be crucial for transitioning to more sustainable, less carbon-intensive development pathways. Education is valuable for promoting ethical approaches and can encourage long-term behavior changes, promote participation, and a sense of responsibility among the general public (UNESCO, 2011).

Preparing youth to respond to climate change in the context of sustainable development is a long-term investment that requires education and participation. Through knowledge and practice, they will be empowered to participate and act on the local and global level throughout their lifetimes. This participation could consist of climate change responsive actions and behaviors that also correlate with transformative attitude, behavior, and value change needed for sustainable development. ESD provides a framework for climate change education through quality education, interdisciplinary learning, use of problem-solving and critical thinking that empowers individuals and communities to make informed decisions and take responsible action (Anderson, 2010; UNESCO, 2011). As the youth of today grow into adulthood and become the leaders of tomorrow, the result would be a societal change conducive to alternative development pathways, rather than a focus on techno-scientific solutions to climate change and sustainable development.

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research Overview

The purpose of this study was to develop a model for youth participation in responding to climate change that aligns with the principles of sustainable development. The institutional and policy framework at the international, regional, and national levels are considered as well as the individual level factors influencing youth participation. Educational responses including formal and non-formal education were key considerations as major channels for enhancing youth participation in climate change. A proposed conceptual process used in this research is shown in Figure 3.1.

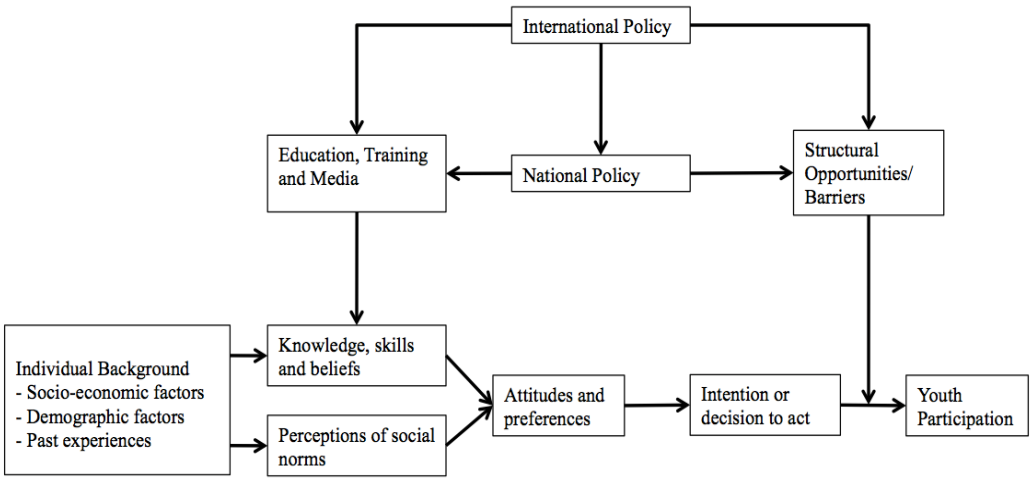

Figure 3.1 Conceptual framework of youth participation in responding to climate change.

3.2 Research Design

The research design in this study was exploratory and descriptive in nature. Neuman (2009) indicated that exploratory research is employed when the topic being studied is new while descriptive research seeks to describe the details of a situation, social setting, or relationship. As relatively little has been written about youth participation in Thailand, this research design therefore seems appropriate.

3.3 Research Approach and Method

A qualitative approach was used in this study that focused on describing, explaining and predicting human nature and behavior. The method of qualitative research was inductive rather than deductive. According to Neuman (2009), inductive research involved the development of empirical generalizations from specific observations. For qualitative research, the collected data consists primarily of words, pictures, observations of cases and available primary data that can be presented in narrative forms, such as written and spoken words, rather than numerical data.

The topic of youth participation inherently deals with the perceptions and experiences of youth and relevant stakeholders, which are situated in a social reality. Using a qualitative approach enabled the researcher to understand the experiences and interactions of youth and relevant stakeholders that may be difficult to measure through other methods. Further, a qualitative approach provided opportunities for youth voice and involvement in the research process that would be limited in a quantitative approach.

3.4 Data Collection

The investigation of the conditions for Thai youth to participate in responding to climate change in Thailand required the examination of policy and normal practice. This study consisted of two components including 1) a desk review of international, regional, and national policy, and 2) semi-structured interviews of stakeholders which is shown in Figure 3.2.

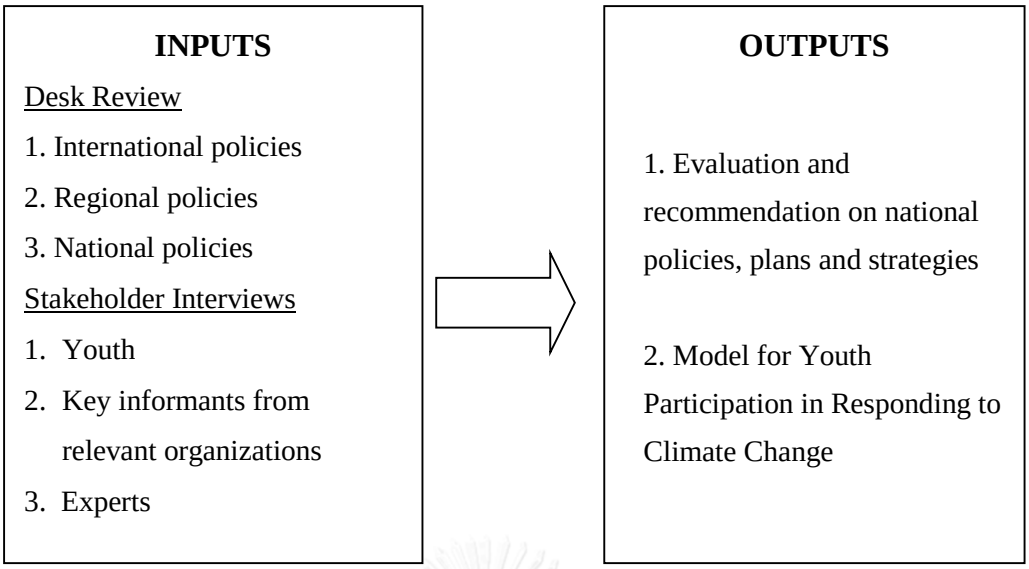

Figure 3.2 Data collection inputs and outputs.

3.4.1 Desk Review

The first part of the study focused on a desk review of relevant international, regional and national policy concerning climate change, sustainable development, and youth.

In studying the international policy and frameworks related to youth participation in climate change and sustainable development, the following United Nations (UN) documents were reviewed: the Stockholm Declaration, *Agenda 21*, United Nations Framework Convention on Climate Change (UNFCCC), Johannesburg Plan of Implementation (JPOI), *The Future We Want*, and the Sustainable Development Goals (SDGs). Linkages from environmental education and education for sustainable development (ESD) to climate change were explored in the Belgrade Charter, the Tbilisi Declaration, and documents related to the United Nations Decade for Education for Sustainable Development (DESD) and the Global Action Programme on Education for Sustainable Development (GAP on ESD). Youth-specific UN policy was examined in the World Programme of Action on Youth (WPAY). The Hyogo Framework for Action (HFA) and Sendai Framework for Disaster Risk Reduction were reviewed concerning linkages between disaster management and climate change. An update regarding Decision 15/CP.18 on Article 6 of the UNFCCC was conducted.

The analysis of Thailand's national policy and plans related to the, environment, climate change and sustainable development provided an understanding of the current policy frameworks, strategies, and plans of implementation in the national policies regarding participation, climate change, and sustainable development. The presence of youth sensitive policies would provide an indication of policies supporting youth participation in climate change and sustainable development. Additionally, the national education policy, plans and related curriculum were analyzed for its inclusion, or lack thereof, of educational topics related to participation, climate change, and sustainable development. The national child and youth policies and plans were reviewed in relation to youth rights, development, and participation in climate change and sustainable development. The desk review was limited to documents in Thai that had been translated into English.

Documentary analysis of Thailand's national policy and plans established the extent to which 1) youth are integrated into national development plan and climate change policy and 2) climate change is integrated into the educational system and youth policy. Table 3.1 shows the international, regional, and national policies and plans in the desk review.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 3.1 Policies and Plans Included in Desk Review

Policy/ Plan	International level	Regional level	National level
Sustainable Development	*Agenda 21* (1992), Johannesburg Programme of Implementation (2002), *The Future We Want* (2012), Sustainable Development Goals (2014)	ASEAN Socio-Cultural Community Blueprint (2009-2015), ASEAN Political-Security Community Blueprint (2009-2015)	11th National Economic Social Development Plan (2012-2016)
Environment and Climate Change	United Nations Framework Convention on Climate Change (1992) (Decision 15/CP.18 on Article 6), Kyoto Protocol (Article 10)	ASEAN Socio-Cultural Community Blueprint (2009-2015), D10 actions on climate change, ASEAN Environmental Education Action Plan (2014-2018)	National Environmental Quality Act (1992), Environmental Quality Management Plan (2012-2016), National Strategies on Climate Change (2008-2012), Climate Change Master Plan (2015-2050)
Disasters	Hyogo Framework for Action (2005-2015), Sendai Framework for Disaster Risk Reduction (2015-2030)	ASEAN Political-Security Community Blueprint (2009-2015), ASEAN Agreement on Disaster and Emergency Response, ASEAN Safe Schools Initiative	Disaster Prevention and Mitigation Act (2007), National Disaster Prevention and Mitigation Plan (2010-2014)
Education	United Nations Decade for Education for Sustainable Development (2005-2014), Global Action Programme on Education for Sustainable Development (2013)	ASEAN Socio-Cultural Community Blueprint (2009-2015), ASEAN Environmental Education Action Plan (2014-2018), ASEAN Safe Schools Initiative	National Education Act (1999), Second National Education Act (2002), National Education Plan (2002-2016), Basic Education Core Curriculum (2008)
Youth	World Action Programme on Youth (1995), United Nations System-wide Action Plan on Youth (2013)	ASEAN Socio-Cultural Community Blueprint (2009-2015)	National Child and Youth Development Promotion Act (2007), National Child and Youth Development Plan (2002-2011), (2012-2016)

3.4.2 Semi-structured Stakeholder Interviews

The study included an intensive, interdisciplinary literature review of theoretical understandings and research in the areas of participation and youth in relation to climate change and sustainable development as mentioned in Chapter II. The information that was derived from the literature review was used to construct guidelines for the semi-structured interviews for key informant and youth respondents.

Semi-structured interviews provided the opportunity to engage in dialogue with stakeholders. The guidelines addressed specific areas of interest to be covered during the interviews. Open-ended questions were used to permit flexibility in the discussion and exploration of topics based on input from the perspective of respondents. Roulston (2010) suggested that open-ended questions should provide broad parameters for respondents to provide responses in their own words. The guidelines were piloted refined prior to full implementation of the interview phase.

Two interview protocols were constructed for this study. The first is the key informant version. The key informant version targeted 'strategic informants' from relevant intergovernmental agencies, government agencies, non-governmental organizations (NGOs)/non-profit sector, and youth groups related to climate change and sustainable development. The 'strategic informants' were individuals familiar with policy and plans on a national or organizational level from their respective agencies or organizations. The interview protocol for key informants focused on the current policies, plans, and practices of the respective intergovernmental agencies, government agencies, non-governmental organizations/non-profit sector towards youth participation in addressing climate change issues (see Appendix B for interview protocol). The key informants interviews supplemented the information derived from the desk review of policy documents with insight into policy implementation and practice.

The initial key informant protocol included the questions from Shier's 'Pathways to Participation' as a tool to evaluating the level of youth participation within the organizations. After piloting the use of the questions on four key informants, the questions were determined to be awkward to use in practice. In cases where the

organization did not have activities directly involving youth, most of the questions did not apply and for organizations that did involve youth, the key informants often hesitated to answer on behalf of the organization. Thus, these questions were omitted for the remainder of the key informant interviews.

The second protocol was the youth interview protocol targeting Thai youth, aged 15 to 24 years old. The youth interview protocol focused on the concerns, understanding, and experiences of the respondents related to climate change and sustainable development. For youth who were members of environmental groups, there were additional questions concerning their organization, its members, and their participation in activities. The youth interview protocol is provided in Appendix C.

In addition, the expert interviews played an analytic role in this research by providing a means of reflecting on initial findings from key informant and youth interviews. These interviews were unstructured in nature and questions were formulated based on the expertise of the respondent relative to the research topic. The expert interviews resembled a conversation between the researcher and the expert on interesting comments, suggestions, and observations from the key informant and youth interviews. Therefore, the expert interviews provide additional analysis on key informant and youth interviews.

Negotiating access to interview respondents involved mailing request letters to organizations identified as key stakeholders. Follow-up calls were made to confirm receipt willingness of the institution and availability of a respondent to participate in the study. In some instances, the organization declined the invitation to participate in the study due to issues of capacity, scheduling, and changes in programming. All attempts were made to maximize the positive response to the invitation letter, including resubmission of the request letter by email, subsequent follow-up calls, and briefing of the intention of the study to the person contacted. Appointments were set up by the researcher in order to conduct interviews with the selected respondents.

At the beginning of each interview, there was an introductory phase in which the interviewed explained the purpose and logistics of the interview. Confidentiality was

assured and informed consent was obtained for every respondent participating in the interview process. Additional consideration for respondents under 18 years of age required consent of a parent or guardian. The informed consent forms were signed and kept with the interview notes, except for a few cases where verbal consent was obtained (see Appendix A for informed consent form). The interviews were recorded with informed consent of the respondents. The respondents were allowed to ask questions or express concerns prior to beginning the interview.

During the interview process, attempts were made to build rapport with the respondents. When respondents were unsure or unclear about questions, the researcher attempted to explain or rephrase the question. Probes, or supplementary questions, were used to get respondents to expand on their responses or to explore certain parts further (Gillham, 2000). For all responses, the researcher tried to make neutral responses that acknowledged the response without giving a positive or negative indication to the respondent. In some instances, the researcher summarized the response given by the respondent in order to verify the meaning was captured accurately. At the conclusion of the interview, the respondents were given the opportunity to ask any questions about the research. Additionally, the researcher's personal motivations behind the research topic were described to respondents. At the conclusion of the interview, the respondents were requested to contact the researcher regarding any further issues or concerns.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

3.5 Study Population

Thailand was selected as the study area because it faces several challenges in terms of climate change mitigation and adaption for a middle-income developing country in Southeast Asia. With the current average life expectancy at birth in Thailand as 74 years (World Bank, 2011), youth in the current generation will be most severely affected and will face the climate change dilemma for many years to come. By the year 2050, the youngest of the current cohort will be over 50 years old. Youth over the age of 18 years can meaningfully participate in politics and engage in the voting process.

The youth population in Thailand is estimated to be 10.5 million in with a declining trend (UN, 2011). It is unfeasible and unrealistic to consider every individual youth or person who is working with youth across the entire population. Therefore, it is

necessary to examine a sample of the population in terms of key informant and youth respondents.

3.6 Sampling and Sampling Procedure/ Duration

Qualitative research sampling does not intended to ensure representativeness but rather to obtain information about key features about social groups in reality (Neuman, 2009). Being exploratory and descriptive in nature, this study used purposive sampling to identify key informants and youth in agencies and organizations to be participants in the semi-structured interviews. Purposive sampling is a non-probability selection of a sample on the basis of knowledge of a population, its elements, and the purpose of the study (Babbie, 2010).

The various stakeholders targeted for the stakeholder interviews included intergovernmental agencies, government agencies, the non-profit sector, media, and youth. Since the study took place in Bangkok, the researcher was able to access key informants from intergovernmental agencies working in the area of environment, education, and development, namely the United Nations Development Programme (UNDP) and United Nations Educational, Scientific, and Cultural Organization (UNESCO). These key informants provided additional perspectives on international policies and programs relevant to the study.

Government agencies associated with national policy and plans related to climate change identified as playing critical roles include: the Office of Natural Resources and Environmental Policy and Planning (ONEP), the Department of Environmental Quality Promotion (DEBQ) and the Thailand Greenhouse Gas Management Organization (TGO) under the Ministry of Natural Resources and Environment (MoNRE). Since education is one of the main strategies for informing and building capacity related to climate change and sustainable development, the Ministry of Education (MOE) was also included. The Ministry of Social Development and Human Security (MSDHS) was added to provide further information child and youth policies.

For the non-profit sector and media, possible organizations and groups were identified through Internet searches. Non-governmental organizations and academic institutions

were included in the non-profit sector. Organization websites were reviewed to ascertain if the organization had activities related to climate change that may or may not involve youth. The actual organizations and groups interviewed were chosen based on relevance of the group's activities to the study and availability of a key informant to participate in the interview. Potential respondents from media agencies were identified that focused on the environmental and youth. These media agencies included to provide perspective on the issues being studied.

A diverse sample of youth was targeted to represent in-school and working youth between the ages of 15 and 24 years, according to the UN definition of youth (UN, 1995). Youth were selected according to their educational status and age group to reflect a variety of individual backgrounds and demographic factors. The research concentrated on institutions and communities located in the Bangkok metropolitan area and its vicinities, although youth engaged often engaged in activities outside this area. Youth who were involved in environmental clubs were interviewed in order to gain insights from individuals who were already interested and participating in environmental issues. Although individuals who were active in environmental activities were selected, many of these individuals did not report themselves as members of environmental clubs. These individuals may be more knowledgeable and sensitive to issues of youth participation in climate change and sustainable development than youth who are not active in such activities.

Experts in related fields were consulted to provide further insight on the data collected from key informant and youth respondents. Five experts were identified with experience in education, environmental education, children's rights, youth, participation, conservation, sustainability and climate change. These experts were academics from universities and consultants from intergovernmental agencies.

The respondents for the stakeholder interviews that were conducted between June and December 2014 are summarized in Table 3.2.

Table 3.2 Summary of Respondents by Type of Stakeholder and Category

Type of Stakeholder	Category	Number of Respondents
Key Informants:		
Intergovernmental agencies	UNDP, UNESCO	2
Government agencies	MoNRE, MOE, MSDHS	8
Non-profit sector	Environment, conservation, development, research, academic, youth	19
Media	Environment and youth magazines	3
Youth:		
Secondary School	15-17 years old	3
University	18-21 years old	4
Graduate School / Working	22-24 years old	7
Youths in environmental clubs	15-24 years old	5*
Experts:		
Environmental education/sustainability	UN consultant	1
Children's rights and participation	UN consultant	1
Education and youth	University	1
Conservation and participation	University	1
Climate change	University	1

*5 of the 14 youth respondents were members of conservation/ environmental groups

3.7 Data Analysis

Qualitative data analysis was described by Marshall and Rossman (2006) as "the process of bringing order, structure, and interpretation to a mass of collected data" (p. 154). Similarly, Holliday (2002) referred to qualitative data analysis as "the process of making sense of, sifting, organizing, cataloging, selecting, determining themes –

processing the data" (p. 99). These processes take that information which has been collected or recorded and attempts to discover patterns among the data that lead to theoretical understanding of social life (Babbie, 2010).

Thematic content analysis is a descriptive presentation of the common patterns or themes found in qualitative data. Braun and Clarke (2006) described the coding process in thematic content analysis as 1) familiarization with data, 2) generating initial codes, 3) searching for themes among codes, 4) reviewing themes, 5) defining and naming themes, and 6) presenting and reporting. Prior to the data analysis process, the raw data underwent a preparation process that also served as the pre-coding phase of familiarization with the data. The data was prepared by reviewing and typing interview notes, listening to audio recordings and transcribing interviews, and developing a spreadsheet to organize and track all data. For interviews that were conducted in Thai, simultaneous translation occurred in the transcription phase.

Materials were organized by type, such as interview notes, audio files, and transcriptions. Gibbs (2007) suggested that the date of interview, biographical information about the respondents, topic and circumstances of interview, name of interviewer, linked documents, initial ideas for analysis, pseudonym or person interviewed, and other anonymizing references were important metadata for interviews. For all interviews, the date of interview and ID code for respondent was included to help track the interview and related documents.

Throughout the process of data collection and data analysis, the researcher recorded notes, or memos, to aid in the reflective process. A research diary was kept in order to document the decisions and reflections made during the data analysis process. As described by Gibbs (2007), "many researchers keep a reflective research diary or logbook in which they record their notes, discussions with fellow researchers, notions about the research process itself, and anything else pertinent to the whole of the research project and data analysis" (p.26). The metadata entries in the research diary were dated and used to record thoughts and processes throughout the analysis and writing phases.

Interview notes and transcripts were subjected to thematic content analysis to identify general pattern and emerging issues. Qualitative data analysis software was used to facilitate the mechanical aspects of data analysis. Thompson (2002) argued that computer programs could assist in the mechanical aspects of managing large amounts of qualitative data so that the researcher can focus on conceptual aspects of data analysis. While physically handing the data is time consuming and tedious, it is recommended by Saldaña (2013) for first-time or small-scale studies. Based on the amount of data collected during this study and the emphasis on semi-structured interviews for exploring the issues related to the research objectives, the data was analyzed manually to increase familiarity with the data prior to engaging in computer-assisted data analysis. For the first round of coding, interview notes, and transcripts were printed out with wide right-hand margins to make physical marking and labeling of raw data easier. Handwritten notes and sticky notes were used in this process.

TAMS Analyzer, an open-source coding and extraction software for qualitative research for MAC operating systems, was used to code selected segments of data and to output reports for different searches. All interview notes and transcripts were imported as rich text format files into the TAMS Analyzer program as raw data. The coding process was cyclical and iterative since these chunks of data are progressively reviewed according to the development of new codes and clustering of codes into categories. For each code, a definition was developed which described the data. The total list of codes and code definitions was included in the code frame. This code frame was exhaustive since each code was included in at least one subcategory of the code frame (Schreier, 2012). The development of categories and themes was based on the conceptual framework and the objectives of this study.

In first cycle coding, the text contained in the interview notes and transcripts were reviewed line-by-line to identify codes. A code is described by Saldaña (2013) as “a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p. 3). In contrast, Saldaña (2013) stated “a theme is an outcome of coding, categorization, or analytic reflection, not something that is, in itself, coded” (p. 14). From the various coding methods described by Saldaña, the first cycle coding methods applied in this

study included in vivo and initial coding while pattern and focused coding were the second cycle coding methods used. In vivo coding occurred when the code was taken from a word or phrase used by the respondent. Initial coding, or open coding, involves the close examination and comparison of elements of the data. Pattern coding aided in the development of emergent themes through the process of grouping and focused coding helped to identify the most frequent or important codes to develop into categories. Simultaneous coding, which refers to the application of two or more different codes to a single unit of qualitative data, were applied when appropriate.

Since this study was exploratory and uses purposive sampling, a content driven approach to coding was employed as suggested by Guest, MacQueen and Namey (2012). A content driven approach means that codes are derived from the data and are not predetermined. Codes were generally derived from the actual words of respondents. To facilitate the identification and search of responses to a particular question, identifying codes, called context codes, were used in TAMS Analyzer for each question in the interview protocol. The coding process continued until the identification of data segments in the data was performed in sufficient detail to begin clustering the codes into categories and sub-categories, which represented the themes found in the data. The question topics in the interview protocols provided an initial structure for the main categories for clustering codes. Themes were developed to reflect the corresponding data as a whole.

During the coding process, the mechanical and conceptual aspects of data analysis occurred simultaneously. The conceptual aspects of data analysis included the identification of meaningful segments of data, organizing these segments into categories, and describing the relationships between these categories (Thompson, 2002). The analysis focused on the results of the data themselves and remained open to the emergent themes that were identified from the analysis. Searches of particular codes performed using TAMS Analyzer helped to find and review where codes occurred and linking to the coded text in corresponding transcripts. Based on different search parameters, TAMS Analyzer generated reports of these searches in the form of a spreadsheet, which linked particular codes and segments of text directly to the full text in the transcripts. This allowed the segments of text to be considered within the

larger context of the interview. In interpreting the data, patterns within the data were identified and linked to existing literature that enhanced meaning, as well as possible alternative explanations.

Triangulation was possible through the desk review, datasets of interviews (key informant, youth, and experts) and the variety of data sources (types of respondents, types of organization for key informants, demographic factors of youth, and fields of expertise for experts). Layder (2013) described triangulation as the use of multiple strategies, sources, and methods produce a dense and comprehensive coverage of the data that enhances reliability, validity and generality of findings.

From the process of coding and theme development, a narrative description of the findings from the interview portion of the methodology is provided in Chapter V. A diagram of the strengths, weaknesses, opportunities, and threats (SWOT) relevant to youth participation in responding to climate change in the context of sustainable development in Thailand was created to summarize the findings. A model for youth participation in responding to climate change in the context of sustainable development in Thailand based on the main factors and conceptual themes derived from the desk review and stakeholder interviews. Lastly, recommendations and areas for future research were made based on the results of the study.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

3.8 Limitations

Several limitations to this study resulted based on the chosen methodology in terms of sampling and access to respondents for the key informant and youth interviews. There were a few language challenges related to the use of two languages for interviewing, based on the preference of the respondent, which resulted in translation and coding issues.

Issues related to sampling included the use of key informants as representatives of their organizations and gaining access to key informants. While the key informant interview protocol focused on the programs and policies of the organization, there was the possibility that the responses provided may or may not be representative of the perspectives of the organizations to which the respondents belonged. In some stances,

the respondent did identify that their responses reflected more personal perspectives.

For the sample of youth, there were methodological issues related to non-probability sampling and gaining access to respondents. Although the youth respondents who were selected were between the ages of 15- 24 years old, it was easier to access youth who were older than 18 years old and were in university. It was more challenging to access youth who were aged 15-18 years old since they were in secondary school. There was also a high representation of youth in the sample who were very proficient in English since 42% of the youth interviews were conducted in English. Many of the youth respondents had studied in international schools in Thailand or abroad. Since all international schools are private schools with high tuition fees, it is possible that the sample of youth may be more representative of middle- and upper-class Thai youth than the general population of Thai youth. The small sample of youth respondents and geographical restrictions means that findings cannot be generalized to the entire youth population and related organizations in Thailand.

The use of semi-structured interviews resulted in challenges related to language since the majority of the interviews were conducted in Thai. For some questions during the interview, the question was difficult to ask since the question in English was direct and when using spoken Thai, it is not common to use direct language when speaking with adults of high rank and authority. Translating Thai words and meanings from a verbal context into English in a written form was also challenging during the transcription process. Efforts were made to translate for ease of understanding and meaning rather than a direct translation. As the researcher was the sole translator, consistency of the Thai-English translation during the transcription process was ensured.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

CHAPTER IV
POLICY REVIEW

The section on relevant historical and policy context in Chapter II provided an overview of major international conferences and corresponding outcome documents on environment, development, environmental education, climate change, and sustainable development. This first section of this chapter reviews the successors of frameworks in the areas of sustainable development, education for sustainable development (ESD) and disaster management. An update on Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC) also details progress on Decision 15/CP.18 and the Doha Work Programme. The second section of this chapter considers relevant regional policies and frameworks on the environment, climate change, environmental education, and disaster management. It focuses on the main regional collective body for Southeast Asia, the Association of Southeast Asian Nations (ASEAN). The third section reviews the major policies and plans of Thailand on national development, environment, climate change, disaster management, education, and youth. The chapter concludes with a summary of the key findings from the policy review.

4.1 International Policy

The past few years have represented a transitional period for several major developmental agendas. These development agendas include *The Future We Want* and, the Global Action Programme on Education for Sustainable Development (GAP on ESD), the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (SDGs) and the Doha Work Programme on Article 6 of the UNFCCC. As a consequence, there were reviews and evaluation reports for progress made on these various agendas and development of programs to succeed these agendas as part of the broader post-2015 development agenda.

4.1.1 Global Action Programme on Education for Sustainable Development

The United Nations Decade of Education for Sustainable Development ended in 2014 according to the General Assembly resolution (A/57/25) adopted in 2002. The United

Nations Decade on Education for Sustainable Development (DESD) was one of several international initiatives that promoted education as a fundamental human right, including the Millennium Development Goals (MDGs) and Education for All (EFA). Education for All pushed access to quality education forward as a global agenda according to the Dakar Framework for Action adopted at the World Education Forum in Dakar, Senegal in April 2000 (UNESCO, 2000). These international initiatives emphasized education as a human right and priority for poverty alleviation that served as a major driver for achieving developmental goals.

In the *Future We Want* (2012), the international community agreed to "promote education for sustainable development and to integrate sustainable development more actively into education beyond the United Nations Decade of Education for Sustainable Development" (para. 233). The Global Action Programme (GAP) on Education for Sustainable Development (GAP on ESD) is a follow-up program to the DESD that was endorsed by the 37th session of the United Nations Education, Scientific, and Cultural Organization (UNESCO) General Conference in 2013. Based on this proposal, the United Nations (UN) General Assembly adopted resolution (A/R/69/211) on the GAP at its 69th session in 2014. The GAP seeks to be a meaningful contribution of the post-2015 development agenda that promotes educational solutions to sustainable development challenges.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The GAP on ESD seeks to accelerate progress towards sustainable development by generating and expanding action on ESD in all levels and areas of education. A publication, titled *UNESCO Roadmap for the Global Action Programme on ESD* (2014), was launched at the UNESCO World Conference on ESD to provide further details on the GAP. Table 4.1 lists the two objectives and five priority areas for the GAP on ESD. The GAP also encourages the designation of a National Focal Point for ESD and ESD coordination mechanism for Member States to facilitate monitoring and reporting on ESD (UNESCO, 2014).

Table 4.1 Global Action Plan on Education for Sustainable Development

Two Objectives	1. To reorient education and learning so that everyone has the opportunity to acquire the knowledge, skills, values, and attitudes that empower them to contribute to sustainable development – and make a difference 2. To strengthen education and learning in all agendas, programs, and activities that promote development
Five Priority Action Areas	• Advancing policy • Integrating sustainability practices into education and training environments (whole- institution approaches) • Increasing the capacity of educators and trainers • Empowering and mobilizing youth • Encouraging local communities and municipal authorities to develop community-based ESD programs

Source: UNESCO (2014)

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Youth are included in the fourth priority action area of the GAP on ESD. This explicit inclusion of youth recognizes the need to garner youth support in their role as change agents for ESD. Youth are seen as drivers of the educational process, especially in non-formal and informal settings. To support youth, it is recommended to enhance non-formal and informal learning opportunities and empower youth with participatory skills needed to act as change agents (UNESCO, 2013). The potential for using information and communication technologies for learning and networking, such as e-learning and mobile learning, was touted as a primary approach for mass mobilization of youth towards sustainable development (UNESCO, 2014).

As GAP strives to move the ESD forward in the post-2014 ESD Agenda, the current development and education agendas, including the MDGs and EFA, are coming to an end. A post-2015 education agenda is being formulated that “must take into

consideration the link between education and development" (UNESCO, n.d., p. 1). The Framework of Action resulting from the World Education Forum in Korea in May 2015 will be promoted as part of the broader post-2015 development agenda.

4.1.2 Sendai Framework for Disaster Risk Reduction

From the stakeholder interviews with key informants and experts, it was apparent that disaster risk reduction and disaster management was an area that needed further consideration in relation to youth participation in responding to climate change. A review of international, regional, and national disaster policies is provided within the respective sections of this chapter.

At the international level, the UN General Assembly declared 1990-1999 the International Decade for Natural Disaster Reduction (IDNDR) (Resolutions 42/169 and 44/236) due to increased concern about disasters and their impacts. Five years later, the *Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness, and Mitigation* and its Plan of Action was adopted at the World Conference on Natural Disaster Reduction (A/CONF.172/9). The Yokohama Strategy built on the mid-term review of the IDNDR.

The International Strategy for Disaster Reduction (ISDR) was endorsed by the General Assembly in 1999 as an international framework for responding to disasters (General Assembly Resolutions 59/231, 58/214, 57/256, 56/195, 54/219). As a result, the UNISDR was created to act as the inter-agency secretariat of the ISDR with the Inter-Agency Task Force on Disaster Reduction. The UNISDR also serves as a focal point within the United Nations system for coordination on disaster reduction.

From the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, the JPOI formulated a clear set of objectives for UNISDR and the Inter-Agency Task Force to mainstream risk reduction into development policies. Three years later, the *Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters* (2005-2015) was adopted at the World Conference on Disaster Reduction (WCDR) in Kobe, Hyogo, Japan. The Hyogo Framework for Action (HFA) was endorsed by the UN General Assembly (A/RES/60/195) in 2005 and served

as the primary framework for driving international cooperation on disaster risk reduction in national and international development agendas. The HFA three strategic goals, five priorities for action, and four cross-cutting issues are shown in Table 4.2.

Table 4.2 Hyogo Framework for Action (2005-2015)

Three Strategic Goals	1. Integration of disaster risk reduction in sustainable development policies and planning; 2. Development and strengthening of institutions, mechanisms, and capacities to build resilience to hazards. 3. Systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, responses, and recovery programs.
Five Priorities Areas	• Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation • Identify, assess, and monitor disaster risks and enhance early warning • Use knowledge, innovation, and education to build a culture of safety and resilience at all levels • Reduce the underlying risk factors • Strengthen disaster preparedness for effective response at all levels
Four Cross-Cutting Issues	1. Multi-hazard approach 2. Gender perspectives and cultural diversity 3. Community and volunteers' participation 4. Capacity building and technology transfer

Source: ISDR (2011)

In 2007, the UN General Assembly established a Global Platform on disaster risk reduction, which replaced the Inter-Agency Task Force, to facilitate the implementation of the HFA. The Mid-Term Review of the HFA reported progress by more than 130

countries on the integration of disaster reduction via institutional arrangement and policies (United Nations International Strategy for Disaster Reduction [UNISDR], 2011). Regional and sub-regional strategies, frameworks, and plans were developed to increase coordination on disaster reduction beyond national borders.

In 2011, the UN General Assembly requested that the UNISDR formulate a post-2015 framework for disaster risk reduction within the context of sustainable development (A/RES/66/199). The Third UN World Conference on Disaster Risk Reduction (WCDRR) was held in March 2015 in Sendai, Japan. The Sendai Framework for Disaster Risk Reduction (2015-2030) was adopted by UN Member States and is the first major agreement of the post-2015 development agenda (A/RES/69/283). The Sendai Framework consists of four priorities for action as follows:

> Understanding disaster risk
>
> Strengthening disaster risk governance to manage disaster risk
>
> Investing in disaster risk reduction for resilience
>
> Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation, and reconstruction. (World Conference on Disaster Risk Reduction [WCDRR], 2015, p. 9)

According to the lessons learned from the HFA in the Sendai Framework, the impact of disasters are as follows (WCDRR, 2015):

> over 700 thousand people lost their lives to disasters, over 1.4 million were injured and approximately 23 million were made homeless as a result of disasters. Overall, more than 1.5 billion people were affect by disasters in various ways. Women, children, and people in vulnerable situations were disproportionately affected. The total economic loss was more than $1.3 trillion. (p. 4)

The Sendai Framework adheres to a people-centered preventative approach to disaster risk reduction that should engage relevant stakeholders. Children and youth are recognized as stakeholders and agents of change that should be given the space and modalities to contribute to disaster risk reduction (DRR). Similar sentiments in the HFA

had initiated global, regional, and national action on DRR in the education sector that would be continued under the Sendai Framework.

The need for coordination among international frameworks in the post-2015 development agenda are reiterated in Paragraph 11 of the Sendai Framework which stated that:

> intergovernmental negotiations on the post-2015 development agenda, financing for development, climate change and disaster risk reduction provide the international community with a unique opportunity to enhance coherence across policies, institutions, goals, indicators, and measurement systems for implementation, while respecting their respective mandates. Ensuring credible links, as appropriate, between these processes will contribute to building resilience and achieving the global goal to eradicate poverty. (WCDRR, 2015, p. 5-6)

Furthermore, the Sendai Framework acknowledged that disasters are increasing in frequency and intensity due to climate change and represents a significant threat to progress towards sustainable development. Thus, international disaster risk reduction policy recognizes the importance of responding to climate change in the context of sustainable development.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

4.1.3 Sustainable Development Goals

The United Nations General Assembly Resolution 66/288 endorsed *The Future We Want* and set commitments for follow up efforts to set forth a post-2015 development agenda in paragraph 248. Subsequently, the sustainable development goals (SDGs) were set forth and adopted by the 68th session of the General Assembly on 10 September 2014 (A/Res/68/970). The goals were designed to have clear targets and indictors to measure outcomes on these targets. The SDGs continues progress on the foundation of the MDGs, while emphasizing the interlinked nature of sustainable development challenges.

Echoing the call for people-centered development from *Agenda 21*, Johannesburg Plan of Implementation (JPOI), and *The Future We Want*, the Report of the Open Working Group of the General Assembly on Sustainable Development Goals proposed that:

> People are at the center of sustainable development and, in this regard, […] the promise was made to work together to strive for a world that is just, equitable, and inclusive and the commitment was made to work together to promote sustained and inclusive economic growth, social development, and environmental protection and thereby to benefit all, in particular the children of the world, youth, and future generations of the world, without any distinction of any kind such as age, sex, disability, culture, race, ethnicity, origin, migratory status, religion, economic or other status. (United Nations General Assembly, 2014b, p. 7)

In keeping with the ideals of *Agenda 21* and *The Future We Want*, the SDGs represent a set of priorities for sustainable development and driver for the global development agenda in the coming decades (show in Table 4.3).

Table 4.3 Sustainable Development Goals

Goal 1	End poverty in all its forms everywhere.
Goal 2	End hunger, achieve food security, and improved nutrition and promote sustainable agriculture.
Goal 3	Ensure healthy lives and promote well-being for all at all ages.
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
Goal 5	Achieve gender equality and empower all women and girls.
Goal 6	Ensure availability and sustainable management of water and sanitation for all.
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all.
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

(table continues)

Goal 10 Reduce inequality within and among countries.
Goal 11 Make cities and human settlements inclusive, safe, resilient, and sustainable.
Goal 12 Ensure sustainable consumption and production patterns.
Goal 13 Take urgent action to combat climate change and its impacts.
Goal 14 Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
Goal 15 Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss.
Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.
Goal 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Source: United Nations General Assembly A/68/970 (2014, p. 10)

Importantly, Goal 13 explicitly calls for urgent action on climate change. The linkages between economic, social, and environmental aspects of sustainable development makes the issue of climate change inherently tied to many, if not all, of the SDGs. Climate change can severely affect progress on Goal 1-11 if segments of the population experienced climate change impacts, such as climate-related disasters, that may threaten their well-being, limit access to resources, and interrupt services. Action on Goal 12 could help to mitigate climate change by reducing emissions through more sustainable consumption and production. Goals 14 and 15 referred to ecological aspects of sustainable development that already suffer consequences from climate change. Progress on these goals might help to increase the resilience of ecological systems to act as a buffer for climate change impacts. Goal 16 emphasized the importance of inclusive and participatory processes at all levels that has become a normative goal for environmental decision-making. Lastly, Goal 17 moved to increase mobilization of resources to ensure developing countries can make progress on sustainable development.

Regarding action on climate change in Goal 13 of the SDGs, the UNFCCC was acknowledged as the primary international forum for negotiating climate change. This goal stresses the integration of climate change into national policies and plans were stressed as well as strengthening resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. Education, awareness-raising, and building human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning systems are also promoted, which aligns with Article 6 of the UNFCCC.

In the SDGs, youth are mostly mentioned in Goal 4 in relation to education and training for employment. Under Goal 13, youth were mentioned in relation to raising capacity for responding to climate change in least developed countries and small island states. However, children are mentioned more frequently than youth in the SDGs. Goal 1 on ending poverty, Goal 2 on ending hunger, Goal 3 on health lives and well-being, Goal 11 on inclusive, safe, resilient, and sustainable cities, and Goal 16 on peaceful and inclusive societies for sustainable development all address children within their recommendations. While SDG Goal 13 specifically addresses climate change represents a substantial move towards linking climate change and sustainable development in international policy, the limited mention of children and youth in relation to climate change is not consistent with the targeting of youth as a key stakeholder in the Doha Work Programme on Article 6 of the UNFCCC.

4.1.4 Article 6 of the United Nations Framework Convention on Climate Change

In 2012, Decision 15/CP.18 (FCCC/CP/2012/8/Add.2) set the scope of the Doha Work Programme on the six elements of Article 6 of the UNFCCC including: education, training, public awareness, public access to information, public participation and international cooperation. For education, the implementation of education on climate change in formal and non-formal education and training programs at all levels explicitly targeting youth as a key stakeholder group. The use of social media platforms and strategies were noted as ways to facilitate public awareness and participation in climate change issues.

For the Implementation of the Doha Work Programme, Parties to the UNFCCC were encouraged to designate a national focal point for Article 6 activities and coordination. Additional suggested actions include: 1) the preparation of a national strategy on Article 6 of the Convention, 2) development of communication strategies on climate change, and 3) strengthening national education and training/skills development institutions to deliver climate change learning action. Youth are explicitly mentioned as a group to be consulted and involved as stakeholders in the formulation and implementation of climate change efforts.

There have also been further developments including the first, second, and third dialogues on Article 6 of the UNFCCC at the international level. The Summary Report on the 1st Dialogue on Article 6 of the Convention shared experiences and ideas, good practices, and lessons learned during the 38th session of the Subsidiary Body for Implementation on 10-11 June 2013 (FCCC/SBI/2013/13) . The six elements of Article 6 were clustered into two focal areas that would rotate on an annual basis, namely 1) education and training, and 2) public awareness and public participation with public access to information with international cooperation as a cross-cutting theme. In 2014, the 2nd Dialogue on Article 6 of the Convention addressed the second focal area in the 40th session of the Subsidiary Body for Implementation (FCCC/SBI/2014/15). The 3rd Dialogue on Article 6 on the first focal area was held in Bonn, Germany in June 2015 and a summary report will be available in December 2015.

At the 20th Session of COP, the Lima Ministerial Declaration on Education and Awareness-Raising was issued (FCCC/CP/2014/L.1/Rev.1). The Declaration reaffirmed the commitment to the implementation of the Doha Work Programme on Article 6 of the Convention. It stressed that "education, training, public awareness, public participation, public access to information, knowledge, and international cooperation play a fundamental role in meeting the ultimate objective of the Convention and in promoting climate-resilient sustainable development" and urged Parities take action accordingly (UNFCCC, 2014, p. 2).

Within the UNFCCC processes itself, the UNFCCC secretariat coordinates with United Nations entities and youth organizations through the United Nations Joint Framework

Initiative on Children, Youth, and Climate Change. Since 2012, this Initiative has worked to empower young people to take action on climate change as promoted in Article 6 of the UNFCCC.

4.1.5 United Nations System-wide Action Plan on Youth

In relation to youth policy, the World Programme of Action on Youth (WPAY) remains the primary initiative on youth development at the international level. However, the United Nations System-wide Action Plan on Youth (Youth-SWAP) is a framework for youth programming within the UN system endorsed in 2013. The Youth-SWAP was developed in response to requests by Member States for a more comprehensive and integrated approach towards youth. The Youth-SWAP has five overarching goals and related indicators for joint action by the UN system on employment, entrepreneurship, protection of rights and civic engagement, political inclusion, education, and health (UN, 2012). The Youth-SWAP seeks to facilitate progress on youth development, including the WPAY.

4.2 Regional Policy

For this study, the regional policy examined related to environment, climate change, environmental education, disaster management, and youth. Thailand was one of the five founding countries of the Association of Southeast Asian Nations (ASEAN) in 1967. Presently, ASEAN comprises of 10 countries in Southeast Asia. These countries are Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam (entered in 1984), Vietnam (entered in 1995), Lao PDR (entered in 1997), Myanmar (entered in 1997), and Cambodia (entered in 1999). Although ASEAN began as a coalition of Nations, the ASEAN Charter entered into force on 15 December 2008 and created a separate legal entity (Association of Southeast Asia Nations [ASEAN], 2014a).

The Preamble of the ASEAN Charter echoes international commitments on sustainable development by resolving “to ensure sustainable development for the benefit of present and future generations and to place the well-being, livelihood, and welfare of the peoples at the center of the ASEAN community building process” (ASEAN, 2014a, p. 2). Further, Article 1 of the ASEAN Charter explicitly promotes “a people-oriented

ASEAN in which all sectors of society are encouraged to participate in, and benefit from, the process of ASEAN integration and community building" (ASEAN, 2014a, p. 5).

To realize the vision of an integrated ASEAN set by The ASEAN Vision 2020, three pillars were established, namely the ASEAN Economic Community (AEC), the ASEAN Socio-Cultural Community (ASCC), and the ASEAN Political-Security Community (APSC). The Heads of State or Governments of the ASEAN Member States approved the *Roadmap for the ASEAN Community (2009-2015)* which set forth three Blueprints corresponding to the three pillars.

4.2.1 ASEAN Environmental Sustainability and Climate Change Policies

The ASEAN Socio-cultural Community is one of the three pillars of ASEAN that seeks to realize an inclusive and people-centered ASEAN Community. The Blueprint for the ASEAN Socio-Cultural Community (2009-2015) addresses six components, namely human development, social welfare and protection, social justice and rights, environmental sustainability, ASEAN identity, and narrowing the development gap.

A strategic objective on responding to climate change and 11 actions (see Table 4.4) are provided within the environmental sustainability component of the ASSC Blueprint as follows:

> D10 Enhance regional and international cooperation to address the issue of climate change and its impacts on socio-economic development, health and the environment, in ASEAN Member States through implementation of mitigation and adaptation measures, based on the principles of equity, flexibility, effectiveness, common but differentiated responsibilities, respective capabilities, as well as reflecting on different social and economic conditions. (ASEAN, 2014d, p. 85)

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 4.4 ASEAN Socio-cultural Community Blueprint Actions on Climate Change

1. encourage ASEAN common understanding on climate change issues and where possible, engage in joint efforts and common positions in addressing these issues;
2. encourage the efforts to develop an ASEAN Climate Change Initiative;
3. promote and facilitate exchange of information/knowledge on research and development, deployment, and transfer of technology and best practices on adaptation and mitigation measures, and enhance human resource development;
4. encourage the international community to participate in and contribute to ASEAN's efforts in afforestation and reforestation, as well as to reduce deforestation and forest degradation;
5. develop regional strategies to enhance capacity for adaptation, low carbon economy, and promote public awareness to address effects of climate change;
6. enhance collaboration among ASEAN Member States and relevant partners to address climate related hazards and scenarios for climate change;
7. develop regional systematic observation system to monitor impact of climate change on vulnerable ecosystems in ASEAN;
8. Conduct regional policy, scientific and related studies, to facilitate the implementation of climate change convention and related conventions;
9. promote public awareness and advocacy to raise community participation on protecting human health and the potential impact of climate change;
10. encourage participation of local government, private sector, non-governmental organizations and community to address the impacts of climate change;
11. promote strategies to ensure that climate change initiatives lead to an economically vibrant and environmentally-friendly ASEAN Community taking into account win-win synergy between climate change and the economic development.

Source: ASEAN (2014d, p. 85-86)

These actions are a step forward for a regional response on climate change. The need for public awareness and public participation are acknowledged and encouraged in actions 8 and 9, despite no mentioned of youth within the actions. Lastly, within the context environmental sustainability, the synergy between climate change and economic development in ASEAN are noted in action 11.

One of the key actions on climate change from the ASCC Blueprint the development of an ASEAN for the development and coordination of regional strategies on addressing climate change. ASEAN created a working group on climate change in 2009 in recognition of threat climate change posed to the region. The ASEAN Working Group on Climate Change is tasked with the implementation of D10 actions of the environment ASCC Blueprint along with other cooperation on climate change. The *ASEAN Action Plan on Joint Response to Climate Change* was developed and approved at an ASEAN Environmental Ministers Meeting in 2012 (ASEAN, 2014c). The plan provided more detailed actions for implementing the Blueprint with the ASEAN Climate Change Initiative, established in 2010, serving as a consultative platform for increase regional coordination and cooperation on climate change (ASEAN, 2012). The ASEAN Working Group on Climate Change coordinates and implements the ASEAN Climate Change Initiative and the D10 actions in the ASCC Blueprint.

Climate change relevant issues are also mentioned within the ASCC Blueprint in regards to synergies on multinational environmental agreements for addressing global environmental issues, promoting of sustainable development through environmental education and public participation, supporting environmentally-sound technology, promoting quality living standards in ASEAN cities, promoting sustainable management of natural resources and biodiversity, promoting sustainability of freshwater resources, and promoting sustainable forest management.

In relation to this study, the promotion of sustainable development though environmental education and public participation is noteworthy as they can be related to youth participation in climate change. The regional initiatives on environmental education are discussed in this section. Disaster risk was discussed in regards to providing a social safety net in order to reduce the negative impacts of integration and

globalization, and building disaster-resilient nations and safer communities. The issue of regional disaster management will be considered in the next section.

The ASEAN Environmental Education Action Plan (AEEAP) serves as a regional framework for regional and national action to promote environmental education and public awareness about environmental management. The promotion of sustainable development through environmental education is part of the D3 actions of the ASCC Blueprint. The implementation of the AAEAP is overseen by the ASEAN Working Group on Environmental Education.

The first AEEAP (2000-2005) and second AEEAP (2008-2012) were developed to facilitate the development of an ASEAN peoples with a sense of responsibility for the environment. Currently, the third AEEAP (2014-2018) has been implemented and strives to increase regional collaboration on environmental education in four focus areas, namely 1) formal education, 2) non-formal education, 3) capacity building, and 4) networking and partnerships (ASEAN, 2014b).

Within the target areas of the AEEAP, youth are implicit and explicit beneficiaries of all four target areas. Although youth are not mentioned under target area 1 for the formal sector, they are the implicit beneficiaries for the national policies and inclusion of environmental education and ESD initiatives in schools. Youth networks are specifically identified for capacity building activities on the development of environmental education and ESD resources and materials under target area 2 on the non-formal sector. The provision of environmental education and ESD leadership training programs for youth are also encouraged under target area 3 for institutional and human resources capacity building. For target area 4, the maintenance and improvement of ASEAN Youth for Sustainable Environment Network is promoted as an ASEAN youth platform for learning on environmental education and ESD. Youth involvement in supported in regional activities, such as debate, competitions, youth camps, youth publications, study tours, exchanges, etc. as well as the organization of an annual "Youth for a Sustainable Environment" Forum at the national and regional levels. Furthermore, the ASEAN Environment Year 2015 is themed 'Empowering the Youth

for a Green ASEAN Community', which highlights the importance of youth in realizing the vision for a clean and green ASEAN.

4.2.2 ASEAN Disaster Management Policies

Beyond environmental education and ESD, disaster management is another area relevant to youth participation in climate change and sustainable development in ASEAN policies. The ASEAN Joint Statement on Climate Change 2014 at the 25th ASEAN Summit reemphasized that "climate change was already having significant impacts in the ASEAN region" with heavy loss and damages from disasters (ASEAN, 2014c, p. 2). The coordination and implementation on disaster management in ASEAN is the role of the ASEAN Committee on Disaster Management that was established in 2003. The ASEAN Committee on Disaster Management developed the ASEAN Regional Programme on Disaster Management for the time period of 2004-2010. The ASEAN Regional Programme on Disaster Management outlined the regional framework and strategies on disaster management and disaster reduction. One of the priority initiatives under the ARPDM was the establishment of an ASEAN Regional Management Framework.

The ASEAN Agreement on Disaster Management and Emergency Response (AADMER) was set forth in 2005, in the aftermath of the Indian Ocean tsunami in 2004. The Agreement provided a framework and related mechanisms for disaster management from prevention to recovery and is part of the region's commitment to the Hyogo Framework for Action. Under the ASEAN Political-Security Community (APSC) Blueprint, the initiative on strengthening ASEAN cooperation on disaster management and emergency response supports joint response on disaster management at the regional level in agreement with AADMER (ASEAN, 2014d).

The Work Programme for AADMER (2010-2015) consists of four strategic thrusts: 1) prevention and mitigation, 2) risk assessment, early warning and monitoring, 3) preparedness and response, and 4) recovery and rehabilitation (ASEAN, 2013). The Work Programme for AADMER works to realize a disaster resilient ASEAN community by 2015. Climate change adaptation was included in relevant components of the Work Programme to strengthen the response to climate-related disasters.

The promotion of public awareness, education, and community participation is given as a measure for disaster prevention and mitigation under Article 6 of the Work Programme for AADMER, although youth are not mentioned explicitly as a target group. Public education, awareness, and advocacy on DRR are suggested for building awareness and resilience of communities. In regards to educational aspects, the Work Programme targets the integration of DRR in school curriculum and teacher training system. Additionally, the safety of educational facilities is considered a priority for the protection of children in the event of a disaster and ensures functionality post-disaster. The realities of climate-related disasters have made DRR in the education sector important for sustainable development.

In the context of disaster management, DRR is important to quality education as disaster risk reduction through education can help save lives and ensure sustainable development. The DESD recognized the interlinked nature of DRR and ESD. The Comprehensive School Safety framework was developed by the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES) and the World Initiative for Safe Schools. The framework combines various efforts on DRR in the education sector into an integrated approach for implementation at global, regional, national and local levels. The four goals of comprehensive school safety are (United Nations Office for Disaster Risk Reducation [UNISDR] and Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector [GADRRRES], 2014):

> To protect learners and education workers from death, injury, and harm in schools;
>
> To plan for educational continuity in the face of all expected hazards and threats;
>
> To safeguard education sector investments;
>
> To strengthen risk reduction and resilience through education.(p.2)

The Comprehensive School Safety framework rests on three pillars, namely 1) safe learning facilities, 2) school disaster management, and 3) risk reduction and resilience education (UNISDR and GADRRRES, 2014). While the first pillar is focused on school infrastructure, the second and third pillars offer opportunities for the participation of

children and youth in school management mechanisms as well as building knowledge, awareness, and skills through education and school activities.

The ASEAN Safe School Initiative (ASSI) is a regional initiative implemented by the ASEAN Secretariat in cooperation with civil society organizations and the AADMER Partnership group. The AADMER Partnership Group is a consortium of international NGOs that is comprised of ChildFund, HelpAge, Mercy Malaysia, Oxfam, Plan International, Save the Children, and World Vision. ASSI is one of the priority projects of ASEAN to make school children more resilient to disasters to be implemented from 2014 to 2016. ASSI supports components of the Work Programme for AADMER on disaster safety of educational facilities and integrating DRR in school curricula.

Phase 1 of ASSI consisted of consultations and workshops for country level audits on current practices and gaps for DRR in schools. The *ASEAN Safe Schools Initiative Phase 1 Report* by the AADMER Partnership Group Consortium (2013) reported that although countries showed commitment to national policies on DRR and climate change adaptation, a common understanding and agreement on standards for Safe Schools was lacking. Furthermore, the report highlighted the absence of national regulatory frameworks for compliance, lack of dedicated budgetary allocation for disaster management, lack of vulnerability assessments, and insufficient technical skills for implantation. The ASEAN Safe Schools Initiative Inception Workshop held in Jakarta, Indonesia on 24-25 November 2014 launched Phase 2 of ASSI. Further implementation of ASSI at national levels in four ASEAN countries began in 2015.

4.2.3 ASEAN Youth Policies

At the regional level, ASEAN promotes contributions of youth and students in national and regional activities as part of the ASEAN community. ASEAN cooperation on youth is the role of the ASEAN Ministerial Meeting on Youth that meets once every two years. The implementation of programs and activities for youth are the responsibility of the ASEAN Senior Officials on Youth, which reports to the ASEAN Ministerial Meeting on Youth (ASEAN, n.d.). In September 2013, the ASEAN Ministerial Meeting on Youth adopted the Work Programme on Preparing ASEAN Youth for Sustainable Development. The Work Programme is the main framework on youth development at

the regional level in four priority areas: 1) policy development, 2) promoting ASEAN awareness and civic responsibility, 3) promoting employability of youth, and 4) information exchange and promoting partnerships (ASEAN, n.d.).

Components of the ASCC Blueprint's initiative on human development (ASEAN, 2014d) supports increased competiveness of ASEAN youth and building of an ASEAN identify by advancing and prioritizing education, investing in human resource development, and strengthening entrepreneurship skills for youth. Other initiatives in the ASCC Blueprint related to youth focused on and ensuring a drug-free ASEAN, promotion of cultural creativity and industry and engagement in the community, under social welfare and protection and building ASEAN identity components of the ASCC Blueprint, respectively.

In relation to this study, the three areas addressing youth under human development were found to focus on promoting access to primary education and training for the development of a productive workforce in a knowledge-based society, in line with international initiatives such as EFA. In particular, the promotion of an ASEAN identity through participation of all sectors of society supports youth volunteerism in emergency and humanitarian activities. However, the inclusion of youth in addressing drug use focuses on youth issues as a problem, rather than a strength. Although youth are included in the ASCC Blueprint, the strongest mention of youth for youth participation is in the ASEAN Environmental Education Action.

Due the overlap in the definitions of children and youth, the mentions of children in the ASCC Blueprint were also reviewed. Within the social justice and rights component of the ASCC Blueprint, the rights of children are recognized under the promotion and protection of the rights and welfare of women, children, the elderly, and persons with disabilities. One of the primary actions is regional capacity building for child survival, development, and protection that adheres to the Convention on the Rights of the Child (CRC). The inclusion of children as a target group in advancing and prioritizing education also aligns with the global agenda on EFA. Furthermore, children are mentioned in promoting information and communication technology, social safety net and protection from the negative impacts of integration and globalization, under human

development and social welfare and protection components, respectively. Overall, the ASEAN youth policies show consideration for the rights of children and youth to protection and education, although there are no strong linkages to climate change issues.

4.3 National Policy

This section reviews the national policy on sustainable development, environment, climate change, disaster management, education and youth to provide insight on relevant policies and plans. Linkages between these policy areas are noted as well as policy gaps that may hinder youth participation in responding to climate change and sustainable development in Thailand

4.3.1 National Social and Economic Development Policies

The outcome document of the UNCED, *Agenda 21* (UNCED, 1992a), "envisaged that the necessary harmonization and extension of existing policies and plans would occur through the adoption of an identifiable strategy for sustainable development" (para. 8.7). The overall objective was "to improve or restructure the decision-making process so that the consideration of socio-economic and environmental issues is fully integrated and a broad range of public participation assured" (UNCED, 1992a, para. 8.3). Subsequently, governments were urged to develop National Sustainable Development Strategies in order to integrate sustainable development into national planning and development processes by 2005.

On the 10th of September 2002, the cabinet resolved to install the National Council for Sustainable Development (NCSD), chaired by the Prime Minister. The National Economic and Social Development Board (NESDB) was designated as the secretary of the Council with representatives from all related ministries and experts comprising the council members. The NESDB, an agency within the Office of the Prime Minister, is responsible for formulating national economic and social development policies that align with global commitments on sustainable development.

The NESDB emphasized the Philosophy of Sufficiency Economy in the Ninth and Tenth National Economic and Social Development Plans (NESDPs) as an approach for

promoting balanced development at all levels of society. This action was a follow-up on *Agenda 21* to incorporate sustainable development issues into national development plans by 2002. All policy in Thailand has to align with the NESDPs. These plans identified strategies to be implemented in 5-year timeframes known as Mid-term Development Plans. Thailand considers their shorter term Mid-term Development Plans as their National Sustainable Development Strategies, the while the *Agenda 21* are long-term guidelines suggest that they cover 10- to 30- year timeframes (Antionio, Ofei-Manu and Olsen, 2014).

The Philosophy of Sufficiency Economy was described and elaborated on by King Bhumibol Adulyadej in remarks made in December 1997 and 1998 (NESDB, 2007). The philosophy sets forth guidelines for living based on the middle path, which is applicable at individual, community, and national levels. In addition to this philosophy, His Majesty the King developed systematic guidelines for natural resource management based on his research on integrated agriculture. The system of agriculture devised by the King is known as 'The New Theory of Agriculture'. The application of the sufficiency economy sought to guide rural, agricultural households towards self-reliance and increase ability to deal with external and internal influences. Mongsawad (2010) discussed the theoretical framework and practices of sufficiency economy as a more resilient and sustainable pathway for societies in the context of globalization.

Figure 4.1 illustrates the Philosophy of Sufficiency Economy. 'Sufficiency' refers to the principles of moderation, reasonableness, self-immunity as protection from external and internal changes. The application of knowledge and morality is required to achieve this sufficiency economy.

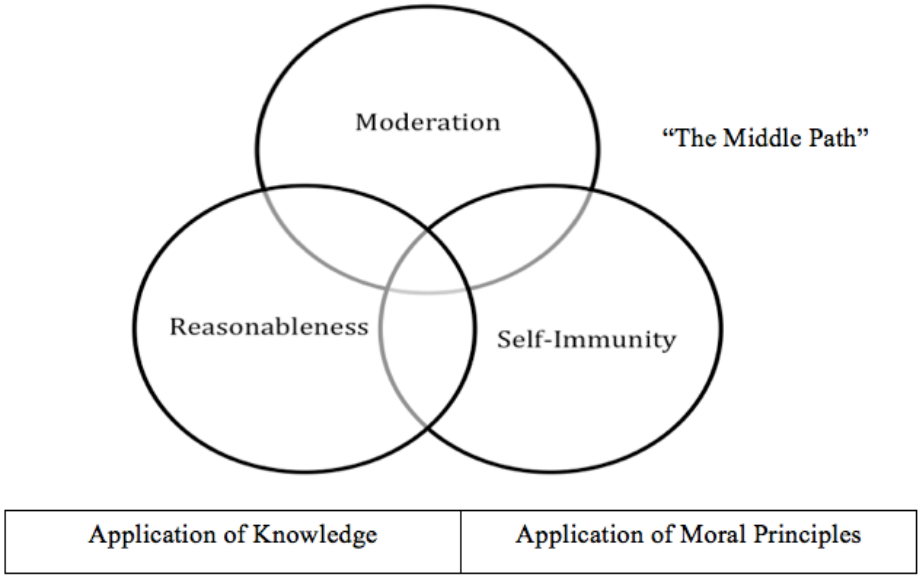

Figure 4.1 The Philosophy of Sufficiency Economy.

Source: ONESDB (2007)

Beyond promoting sufficiency economy, the 10th NESDP (2007-2011) has the aim of creating a 'Green and Happy Society' and embraced a vision of people-centered development. It provided measures to promote sustainable transport and increase green areas in cities. Specifically related to climate change, the 10th NESDP developed a policy framework for climate change mitigation through increased energy efficiency and the reduction of greenhouse gas emissions.

The 11th NESDP (2012-2016) offers a shared vision of 'a happy society with equality, fairness and resilience' (National Economic Social Development Board [NESDB], n.d., p. x). It continued to implement the key elements of the Philosophy of Sufficiency Economy with people-centered development. The six development strategies included in the plan are as follows:

- Creating a just society;
- Developing a lifelong learning society;
- Strengthening of the agricultural sector and security of food and energy;
- Restructuring the economy toward quality growth and sustainability;

- Creating regional connectivity for social and economic stability;
- Managing natural resources and the environment toward sustainability. (NESDB, n.d.)

The current NESDP recognizes global warming and the effects of climate change as threats to Thailand's development. The fourth mission of the plan is "to build secure natural resource and environmental bases through supporting community participation and improving resilience that will cushion from impacts of climate change and disasters" (NESDB, n.d., p. x). Many of the development strategies with the NESDP considered climate change threats to the current situation as well as the implementation of proposed actions. The climate change impacts described in the 11th NESDP that are predicted for Thailand were loss of coastal areas, water shortage, food and energy insecurity, and natural disasters.

The 11th NESDP offered actions related to climate change and its impacts in Chapter 8 on managing natural resources and the environment toward sustainability as follows:

1. Paradigm shift towards environmentally-friendly society and low-carbon economy;
2. Upgrade capacity for adaptation through knowledge and management tools for responding to climate change;
3. Protect trade subject to environmental conditions and climate change;
4. Enhance the country's role in international arenas where environmental agreements and commitments are involved. (NESDB, n.d.)

In order to shift the development paradigm, the plan focused on sustainable production and consumption. While production, energy and transport sectors were encouraged to upgrade system and utilize environmentally responsible practices, people in society were encouraged to apply sufficiency economy to their way of life and use of natural resources. However, it is mentioned that most people are unaware of the principles of sustainable consumption due to lack of information and the norm of materialism. Thus,

the strategies also suggested publicizing information to people about the environment and sustainable consumption to create informed consumers.

The enhancement of adaptive capacity on climate change included various strategies including scientific and technological research, curriculum for researchers, and dissemination of information for public awareness. Strategies for increasing community readiness for responding to climate change focused on communication of risk, risk management, measures to deal with damages, and long term planning. Youth participation and education on climate change were not featured in the 11th NESDP. Overall, these strategies are the foundation for climate policy in Thailand.

Regarding responses to natural disasters under the section for managing natural resources and the environment toward sustainability, the 11th NESDP suggested actions for mapping risk areas, upgrading disaster management, developing databases and communication systems, establishing disaster relief planning, and the preparation of the private sector, public enterprises, schools, and local authorities. These actions are relevant to further national policies and align with action on international and regional disaster management frameworks.

4.3.2 Environmental and Climate Change Policies

The Ministry of Environment (MoNRE) is responsible for considering issues related to the environment and climate change in Thailand. The Enhancement and Conservation of National Environment Quality Act B.E. 2535 was enacted in 1992 and accorded rights and duties for the public in relation to environmental quality. The Act designated the Office for Natural Resources and Environmental Policy and Planning (ONEP) as the main agency responsible for formulating policies and plans on natural resources and environmental management.

The Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (1997-2016) was introduced as Thailand's long-term plan on the environment. To date there have been four medium-term plans Environmental Quality Management (EQM) Plans. The current EQM Plan is for the period of 2012-2016 and is complementary to the 11th NESDP. The EQM Plan builds upon the

Philosophy of Sufficiency Economy for balanced use of natural resources for the ultimate goal of sustainable development. The goals of the EQM include: 1) encouraging more environmentally-friendly production and consumption; 2) protecting ecological integrity by sustainable conserving and restoring natural resources and biodiversity; 3) mitigating social inequity by enhancing access to natural resources and environment; 4) enhancing environmental quality; 5) creating resilience to climate change and natural disasters; and 6) creating an environmentally responsible society (ONEP, 2011).

All six of these goals are relevant to responding to climate change in the context of sustainable development. In relation to sustainable development, these goals consider the protection of the environment and biodiversity for all people but emphasize the equitable use of natural resources. The conservation of natural resources is linked with building resilience against climate change and natural disasters that is important for climate change adaptation and disaster management. Moreover, sustainable production and consumption of goods and services and the creation of a more environmentally responsible society would support carbon emissions reduction. However, neither youth nor education were mentioned linked to reaching these goals.

Thailand was signatory to the UNFCCC on 12 June 1992 and ratified the Convention on 28 December 1994. In regards to the Kyoto Protocol, Thailand became a signatory on 2 February 1999 and ratified the Protocol in 28 August 2002. Since then, Thailand has worked to develop environmental policies related to climate change that align with these international instruments. The ONEP, under the MoNRE, serves as the national focal point for the UNFCCC and the Kyoto Protocol. In regards to public awareness, the Department of Environmental Quality Promotion (DEQP) is the agency under the MoNRE responsible for awareness-raising and public participation in environmental issues. The DEQP also serves as the national focal point for the ASEAN Environmental Education Plan and Article 6 of the UNFCCC.

The National Committee on Climate Change Policy (NCCC) was developed in 2007. The NCCC is responsible for discussing and formulating climate policy and is chaired by the Prime Minister. Under the ONEP, the Climate Change Management and

Coordination Division (CCMC), formerly the Office of Climate Change Coordination (OCCC), serves as the secretariat of the NCCC and is responsible for coordination on climate change policy. There are three main sub-committees under the NCCC including the Technical Sub-committee, the Negotiation Sub-committee, and the Nationally Appropriate Mitigation Actions (NAMA) Sub-committee. There is the Climate Change Coordinator mechanism to aid in communicating and coordinating with the NCCC on climate-related issues. The Climate Change Coordinators are designated officers from 30 agencies, 19 in ministerial agencies, and 11 in non-ministerial government agencies. Figure 4.2 depicts the institutional structure for climate change policies in Thailand.

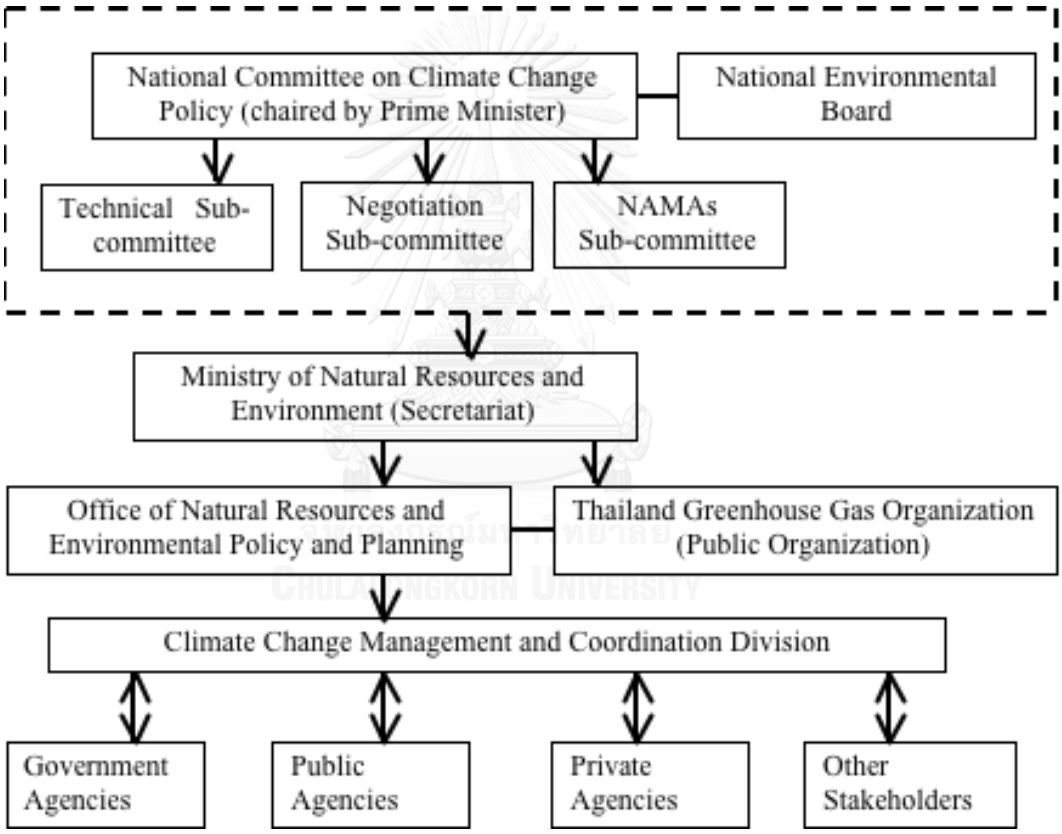

Figure 4.2 Institutional structure for climate change policy in Thailand.

Source: adapted from United Nations Development Programme (2012)

In 2007, a *Royal Decree on Thailand Greenhouse Gas Management Organization (Public Organization) Establishment* was approved and put into effect by the *Order of the Prime Minister on Climate Change*. The Thailand Greenhouse Gas Organization (TGO) was established in 2007 and acts as the Designated National Authority for Clean

Development Mechanism (CDM) in Thailand. TGO works to coordinate activities on greenhouse gas management to mitigate climate change.

The National Strategies on Climate Change (2008-2012) were approved by the Cabinet in 2008 and outlined a framework with six strategies to be undertaken by various agencies. These strategies are listed in Table 4.5.

Table 4.5 National Strategies on Climate Change (2008-2012)

Strategy 1	build capacity to adapt and reduce vulnerabilities to climate change impacts
Strategy 2	promote greenhouse gas mitigation activities based on sustainable development
Strategy 3	support research and development to better understand climate change, its impacts, and options for adaptation and mitigation
Strategy 4	raise awareness and promote public participation
Strategy 5	build capacity of relevant personnel and institutions and establish a framework of coordination and integration
Strategy 6	support internal cooperation to achieve the common goal of climate change mitigation and sustainable development.

Source: ONEP (2007)

Strategies 1 and 2 represented the traditional responses to climate change in adaptation and mitigation, respectively. In contrast, strategy 3 focused on research and development on which to base and expand the options for climate change adaptation and mitigation. Strategies 4 and 5 are both considered aspects relevant to Article 6 of the UNFCCC since these addressed education, training and awareness on climate change. Strategy 4 sought to raise awareness and promote public participation through public campaigns on climate change education, encourage community participation in adaptation and mitigation options, provide public hearings on local and national plans and encourage the inclusion of climate change education in schools curricular activities while Strategy 5 targeted capacity building of personnel and institutions and the establishment of a framework of coordination. Lastly, Strategy 6 worked towards active

participation in cooperation at international and regional levels towards the goal of climate change mitigation in the context of sustainable development.

The National Master Plan on Climate Change (2010-2019) was drafted by ONEP and replaced by the Climate Change Master Plan (2015-2050). The adoption of the Climate Change Master Plan and the Nationally Appropriate Mitigation Action (NAMA) Roadmap by the National Climate Change Committee was announced at COP20 in Lima, Peru (Deutsche Gesellschaft für Internationale [GIZ], 2015). The Climate Change Master Plan provides a long-term plan for action on climate change in Thailand. The NAMA Roadmap set targets for CO_2 reduction of 7-20% by 2020, compared to the business as usual scenario with the reference year 2005. The targeted 7% CO_2 reductions are to be achieved through domestic NAMAs while the 20% CO_2 reduction target is achievable through internationally supported NAMAs.

Within Thailand's Climate Change Master Plan (2015-2050), the section on capacity building for the management of climate change mentions youth under the target group of educational institutions and academia (ONEP, 2015). There are two measures that address youth, namely 1) the adjustment of educational curriculum about the environment to include climate change in all levels of education and support of extra-curricular activities for youth, and 2) the promotion of the business and industrial sectors that have Corporate Social Responsibility (CSR) activities related to the environment to have activities with youth and communities to encourage participation (ONEP, 2015). These mentions of youth support the inclusion of educational initiatives on climate change and extra-curricular activities for youth that would help to build awareness on climate change, but do not support youth participation in climate change in activities related to decision-making and implementation of programs. Additionally, young children are mentioned as being vulnerable to the climate change in regards to health and disease, especially those under the age of 5, but youth are not mentioned in these aspects or in relation to climate-related disasters. In contrast, the private sector and citizen groups are targeted for participation in planning, decision-making, monitoring, and evaluation for effective implementation of the Climate Change Master Plan.

A summary of the environmental quality and climate change plans and policies is provided in Figure 4.3. Several ministerial plans that are relevant to climate change mitigation in the energy, industrial, and transportation sector, but are not considered in this study since these sectors are not strongly linked to youth participation in responding to climate change, they are not considered in this study.

<table>
<tr><th>Year</th><th colspan="4">Plan and Policy</th></tr>
<tr><td>2007</td><td rowspan="4">10th NESDP</td><td rowspan="9">Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality (from 1997)</td><td rowspan="4">Environmental Quality Management Plan</td><td></td></tr>
<tr><td>2008</td><td rowspan="4">National Strategies on Climate Change</td></tr>
<tr><td>2009</td></tr>
<tr><td>2010</td></tr>
<tr><td>2011</td><td rowspan="5">11th NESDP</td><td rowspan="5">Environmental Quality Management Plan</td></tr>
<tr><td>2012</td></tr>
<tr><td>2013</td><td></td></tr>
<tr><td>2014</td></tr>
<tr><td>2015</td><td rowspan="4">Climate Change Master Plan</td></tr>
<tr><td>2016</td></tr>
<tr><td>…</td><td colspan="2"></td></tr>
<tr><td>2050</td></tr>
</table>

Figure 4.3 Chronology of plans and policies on environment and climate change.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4.3.3 Disaster Management Policies

Disaster management has become increasingly linked with responding to climate change as climate-related disaster events increase in frequency and severity. The Ministry of Interior is responsible for disaster management in Thailand. The Department of Disaster Prevention and Mitigation (DDPM), under the Ministry of Interior, was established in 2002 by the Bureaucratic Reform Act. The DDPM acts as the secretariat of the National Disaster Prevention and Mitigation Committee (NDPMC). The DDPM is the focal point for the Hyogo Framework for Action and is mandated to plan and created policy for disaster management. The Prime Minister chairs the NDPMC and its members consist of representatives from related ministries, military forces and experts.

Tanwattana and Murayama (2014) described the inclusion of disaster management within the Ninth, Tenth and Eleventh NESDPs as follows:

- The Ninth NESDP (2002-2006) promoted participatory processes and introduced community-based disaster risk management.
- The Tenth NESDP (2007-2011) established the National Tsunami Prevention and Mitigation Strategy.
- The Eleventh NESDP (2012-2016) sought to conserve the natural resource and environmental base through community participation and building resilience in order to lessen impacts from climate change and disasters.

Prior to 2005, there was no policy specifically addressing disasters in Thailand. After the 2004 tsunami, Thailand announced the National Preparedness Policy for the development of emergency plans for different disasters. The National Civil Defense Plan of 2005 was also in effect. The Disaster Prevention and Mitigation Act of 2007 was enacted and detailed the definition of a disaster and the institutional arrangements and responsibilities for different agencies in regard to disaster prevention and mitigation. Accordingly, the DDPM created the National Disaster Prevention and Mitigation Plan (2010-2014) to respond to disasters and is responsible for monitoring its implementation.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The Cabinet approved the Strategic National Action Plan (SNAP) for Disaster Risk Reduction (2010-2019) in 2009. SNAP considered disaster risk reduction activities for various types of hazards under the Hyogo Framework for Action. Two years later, the DDPM established the Department of Disaster Prevention and Mitigation Strategy Plan (2012-2016) in accordance with Article 11 of the Disaster Prevention and Mitigation Act of 2007. The plan provided the framework and guidelines for the formulation of programs for disaster prevention and mitigation for all relevant agencies. The chronology of the plans and policies on disaster management is depicted in Figure 4.4 and reveals the overlapping nature of these plans.

<table>
<tr><th>Year</th><th colspan="3">Plan and Policy</th></tr>
<tr><td>2002</td><td rowspan="4">9th NESDP</td><td colspan="2" rowspan="3"></td></tr>
<tr><td>2003</td></tr>
<tr><td>2004</td></tr>
<tr><td>2005</td><td colspan="2">National Civil Defense Plan
National Preparedness Policy</td></tr>
<tr><td>2006</td><td colspan="2"></td></tr>
<tr><td>2007</td><td rowspan="5">10th NESDP</td><td colspan="2">Disaster Prevention and Mitigation Act</td></tr>
<tr><td>2008</td><td colspan="2" rowspan="2"></td></tr>
<tr><td>2009</td></tr>
<tr><td>2010</td><td rowspan="4">National Disaster Prevention and Mitigation Plan</td><td rowspan="8">The Strategic National Action Plan (SNAP) for Disaster Risk Reduction</td><td></td></tr>
<tr><td>2011</td><td rowspan="4">Department of Disaster Prevention and Mitigation Strategy Plan</td></tr>
<tr><td>2012</td><td rowspan="5">11th NESDP</td></tr>
<tr><td>2013</td></tr>
<tr><td>2014</td></tr>
<tr><td>2015</td><td rowspan="5"></td></tr>
<tr><td>2016</td><td rowspan="4"></td></tr>
<tr><td>2017</td><td rowspan="3"></td></tr>
<tr><td>2018</td></tr>
<tr><td>2019</td></tr>
</table>

Figure 4.4 Chronology of plans and policies for disaster management.

Source: Tawattana and Murayama (2014)

Within the National Disaster Prevention and Mitigation Plan (NDPMP), the negative consequences of climate change on Thailand's economic and social development are acknowledged. Climate change is recognized as a likely to increase disasters in Thailand due to intensified monsoons and changes in rainfall patterns. Shore-based communities on the eastern and southern coastal areas of Thailand are identified as being most prone to flashfloods as a result of these changes. Inland metropolitan urban areas, such as Bangkok, Hat Yai, and Chiang Mai, are also predicted to experience flashfloods due to increased intensity of rainfall coupled with insufficient drainage systems. Global warming is also linked to more frequent outbreaks of diseases, such as malaria and dengue fever.

According to the *ASEAN Safe Schools Initiative Phase 1 Report*, the national consultation for Thailand found that there were no current mechanism for school

vulnerability assessment and reporting. In terms of safe school construction practices and guidelines, the Office of Basic Education Commission (OBEC) provides standardized guidelines for all educational facilitates, although these guidelines do not ensure standardization in practice. For the integration of DRR in education, OBEC has distributed guidelines on mainstreaming DRR into school curricula that can be customized to local contexts and needs. While OBEC provides guidelines for hazard management, the local Education Service Area Offices are responsible for coordination and management at the local level. Table 4.6 summarizes the challenges and gaps found in the Thai national consultation on ASSI for the Phase 1 Report.

Table 4.6 Challenges and Gaps for ASEAN Safe Schools Initiative in Thailand

Challenges and Gaps
• No overall assessment protocol of safety standards of existing schools or a coordinated information database on hazards and risks. • A need for technical support for schools to upgrade safety features. • A need for flexible curricula to accommodate cultural, social, and linguistic context and to be appropriate for non-formal education as well as appropriate for local needs. • A need for review and monitoring process to examine the coverage and relevance of DRR curriculum and mainstreaming. • A need for technical training and development in DRR or education sector staff in high-risk zones. • A need for participatory pedagogy to enhance learner-centered approaches to DRR education. • No clear focal point for disaster management and coordination. • No practical guidelines on DRR activities for local schools. • No consistent budgetary allocation for DRR or recovery. • No focal points for school recovery efforts after disasters.

Source: AADMER Partnership Group Consortium (2013)

Disaster education and public awareness is a component of the prevention and impact reduction strategies in the Annex of the NDPMP. The area of promotion of disaster

knowledge, perception, and awareness of the general public does specify actions to create a Disaster Education and Public Awareness Creation Plan and disaster education curriculum and related materials for students at all levels. Children are identified as a vulnerable segment of the community that needs assistance and are the first priority for evacuation, which is in accordance with the CRC. In contrast, youth are only acknowledged as a target for specific training programs for disaster volunteers. Overall, there is limited inclusion of youth in the NDPMP and there is no mention of youth participation in disaster management beyond targeting for educational activities.

4.3.4 National Education Policies

The Office of the Prime Minister, the Ministry of Education and the Ministry of the Interior are responsible for educational management in Thailand. The Ministry of Education is the government agency responsible for overseeing the provision of education at all levels from pre-primary to tertiary education. The educational system in Thailand is administered at national, regional and local levels. At the regional level, the 76 provinces (excluding Bangkok) are organized into 12 education regions with their own regional offices. At the provincial level, the provincial offices oversee education within their provinces. The Bangkok Metropolitan Administration is responsible for public schools operating in the province of Bangkok. At the local level, individual municipalities are responsible for primary education provision within its jurisdiction.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The National Education Act (1999) and its Amendments (2002) serves as the law for the administration and provision of education. The Act and its amendments were developed by the Office of National Education Commission (ONEC) under the Office of the Prime Minister. These laws emphasize the decentralization of educational authority to communities and schools in order to enable schooling to meet the needs of the community. The reforms led to the establishment of Education Service Areas (ESAs) to facilitate this decentralization. There are currently 185 ESAs in Thailand, 3 of which are in Bangkok.

Within Section 6 of the Act, the aim of education is given as “the full development of the Thai people in all aspects: physical and mental health; intellect; knowledge;

morality; integrity; and desirable way of life so as to be able to live in harmony with other people" (Office of National Education Commission [ONEC], 1999, p. 4). Compulsory education was designated for children aged seven to 16 years old with 12 years of free public schooling. The principles for educational provision are stated in Section 8 as: 1) lifelong education for all, 2) all segments of society participating in the provision of education, and 3) continuous development of bodies of knowledge and learning processes (ONEC, 1999, p. 5).

In regards to the environment, Section 7 of the Act stated that the learning process should aim at "inculcating the ability to preserve natural resources and the environment" (ONEC, 1999, p. 5). Section 23.2 elaborated that formal, non-formal and informal approaches at each level of education should emphasize "scientific and technological knowledge and skills, as well as knowledge, understanding, and experience in management, conservation, and utilization of natural resources and the environment in a balanced and sustainable manner" (ONEC, 1999, p. 10). These points are aligned with the pedagogical aspects of environmental education.

The Education Council was mandated by the National Education Act 1999 and the Second National Education Act 2002 to propose standards for national education. Following this mandate, the Education Council proposed the National Education Standards (ONEC, 2005) to improve educational quality, which were approved by the Council of Ministers in 2004. Three standards and 11 indicators were set towards realizing a knowledge society in Thailand (see Table 4.7).

Table 4.7 Three Standards of the National Education Standards

Three Standards	1. Desirable characteristics of Thai people as both citizens of the country and members of the world community
	2. Guidelines for educational provision
	3. Guidelines for creating a learning society and knowledge society

Source: ONEC (2005)

For Standard 1, the social skills indicators were that "Thai people will appreciate and recognize the important roles of nature, environment and society. They will have the

essential skills and competencies for leading a happy life in the society" and that "Thai people will have a sense of responsibility […] they will be able to find solutions to various problems through peaceful means" (ONEC, 2005, p. :4). For the righteousness, public-mindedness, and consciousness of their citizenship in Thailand and the world indicators, Thai people "will be good citizens who offer voluntary services for the benefit of the community, society, and ultimately, the whole world", and "will also observe a democratic way of life" (ONEC, 2005, p. 4). These indicators promote appreciation of nature and the environment as well as the concept of participation through social responsibility, peaceful problem-solving, volunteerism, and democratic processes that are conducive to youth participation in climate change and sustainable development.

The National Education Plan (2002-2016) was prepared by the ONEC under the Office of the Prime Minister, as mandated by section 33 of the National Education Act. The National Education Plan was adopted by the Council of Ministers on 17 June 2002. The plan emphasized human-centered development towards a knowledge-based society through a holistic scheme of education, religion, art, and culture (ONEC, 2002-3). It promoted continuous learning and the involvement of all segments of society in decision-making concerning public activities.

The Office of Basic Education Commission (OBEC) is the agency responsible for formal education in Thailand. The formal education system is divided into two to three years of pre-primary education, six years of primary education, and six years of secondary education. The Basic Education Curriculum (2001) was developed by OBEC and later replaced by the Basic Education Core Curriculum (2008) (No. OBEC 293/2551). The Basic Core Curriculum provided a framework and guidance of educational offices and institutions for the preparation of appropriate curriculum in order to realized decentralization of educational authority. The Basic Core Curriculum detailed the essential knowledge and skills required by Thai children and youth for living in a constantly changing society.

The aim of the Basic Core Curriculum was to inculcate learners with five competencies, namely communication capacity, thinking capacity, problem-solving capacity, capacity

for applying life skills, capacity for technological application. These competencies are consistent with the skills promoted in education for sustainable development. In particular, problem-solving capacity includes the "ability for judicious decision-making, bearing in mind possible negative effects on oneself, society and the environment", thinking capacity refers to "the capacity for analytical, synthetic, constructive, critical and systematic thinking, leading to creation of bodies of knowledge or information for judicious decision-making regarding oneself and society" and the capacity for applying life skills considers the "elimination of problems and conflicts through proper means; ability for self-adjustment to keep pace with social and environmental changes; and capacity for avoiding undesirable behavior with adverse effects on oneself and others" (OBEC, 2008, p. 6). In relation to the research themes, all of these competencies would be valuable for youth in responding to climate change and sustainable development issues.

Environment is addressed within the Basic Core Curriculum in Science Strand 2 on Life and the Environment. Standard Science 2.1 focuses on the "understanding of local environment, relationship between the environment and living things, relationship between living things in the eco-system; having investigative process for seeking knowledge and scientific reasoning and communicating acquired knowledge that could be applied for useful purposes" (OBEC, 2008, p. 14). This standard sets the foundation for understanding natural systems. Standard Science 2.2 emphasizes "the importance of natural resources, utilization of natural resources at local, national and global levels, and application of knowledge for management of natural resources and local environment on a sustainable basis" (OBEC, 2008, p. 15). Building on Standard Science 2.1, this standard provides an opportunity to discuss sustainable natural resource management. The relevant grade-level indicators for this standard are provided in Table 4.8.

Table 4.8 Relevant Indicators on Standard Science 2.1 Grade 3-12

Grade 3	Indicator 1 Explore natural resources and discuss utilization of local natural resources. Indicator 2 Specify utilization of natural resources conducive to creating local environmental problems. Indicator 3 Discuss and present ideas for economical and cost-effective utilization of natural resources and participate in practice.
Grade 6	Indicator 1 Search for data and discuss sources of natural resources in each local area beneficial to living. Indicator 2 Analyze effects of population increase on utilization of natural resources. Indicator 3 Discuss effects on living things from environmental change both due to nature and due to human beings. Indicator 4 Discuss guidelines for taking care of and preserving natural resources and the environment. Indicator 5 Participate in providing care and preservation of natural resources in the local area.
Grade 9	Indicator 1 Analyze the state of problems concerning the environment and natural resources in the local area, and propose guidelines for problem-solving. Indicator 2 Explain guidelines for preserving the equilibrium of the ecosystem. Indicator 3 Discuss sustainable utilization of natural resources. Indicator 4 Analyze and explain utilization of natural resources in terms of the Sufficiency Economy Philosophy. Indicator 5 Discuss environmental problems and propose relevant guidelines for problem-solving. Indicator 6 Discuss and participate in providing care and preserving the local environment on a sustainable basis.
Grade 10-12	Indicator 1 Analyze the state and causes of problems concerning the environment and natural resources at local, national, and global levels. Indicator 2 Discuss guidelines for preventing and solving problems concerning the environment and natural resources. Indicator 3 Plan and observe, preserve, and develop the environment and natural resources.

Source: OBEC (2008, p. 121-122)

Climate is mentioned within the Basic Core Curriculum under Science Strand 6 on Change Processes of the Earth. Standard Science 6.1 states that learners would have an "understanding of various processes of the Earth's surface and interior, relationship between various processes causing changes in climate, topography and form of the Earth, having investigative process for seeking knowledge and scientific reasoning, and communicating acquired knowledge that could be applied for useful purposes" (OBEC, 2005:23). The grade level indicators for Standard Science 6.1 relevant to climate change and disasters are summarized in Table 4.9.

Table 4.9 Relevant Indicators on Standard Science 6.1 Grade 6-7

Grade 6	Indicator 3 Search for data and explain geological disasters affecting human beings and the environment in the local area.
Grade 7	Indicator 1 Search for relevant information and explain components and division of atmospheric layers covering the Earth's surface.
	Indicator 2 Experiment and explain relationship between temperature, humidity, and air pressure and climate-affective phenomena.
	Indicator 3 Observe, analyze, and discuss formation of climate phenomena affecting human beings.
	Indicator 5 Search for, analyze, and explain effects of climate on the lives of living things and the environment.
	Indicator 6 Search for relevant information, analyze, and explain natural factors and man-made actions affecting changes on the Earth's temperature, ozone holes, and acid rain.
	Indicator 7 Search for relevant information, analyze, and explain effects of global warming, ozone holes, and acid rain on living things and the environment.

Source: OBEC (2008, p. 135-138)

Under Science Standard 6.1, Indicator 3 for Grade 6 address the impact of disasters on humans and the environment that can be linked to disaster management and climate change adaptation. Indicators 1-5 for Grade 7 provide a foundation for climate science and the effect of climate on living things. Both Indicator 6 and Indicator 7 are

specifically concerned with man-made climate problems, such as global warming, ozone holes, and acid rain, that can provided a basis for understanding climate change even though climate change is not explicitly mentioned.

The learning area of social studies, religion, and culture includes learning standards under the topic of geography that relates to the environment and development. Specifically, Standard Social Studies 5.2 under Strand 5 Geography called for "understanding of interrelationship between man and physical environment leading to cultural creativity, awareness of and participation in conservation of resources and the environment for sustainable development" (OBEC, 2008, p. 18). Relevant grade-level indicators for Grades 1-6 and Grades 7-12 are listed in Table 4.10 and Table 4.11, respectively.

As Table 4.10 demonstrates, Standard Social Studies 5.2 of the social studies curriculum provides many opportunities to study the relationship between society and the environment in terms of society's dependence on the environment as well as changes in the environment over time. The indicators listed in Table 4.11 cover natural resource use and environmental change in various regions of the world as well as their impacts on Thailand. At the upper secondary level, the learners are expected to understand global environmental situations and crises along with the international laws and cooperation to regulate and management natural resources and the environment. The indicators also encourage student participation in conservation activities in their daily lives and the community that are aligned with sustainable development. Many learning activities related to climate change and sustainable development could be discussed in relation to Standard Social Studies 5.2.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 4.10 Relevant Indicators on Standard Social Studies 5.2 Grade 1-6

Grade 1	Indicator 1 Tell various things of natural origin affective the lives of human beings.
	Indicator 2 Observe and compare environmental changes in the surrounding.
Grade 2	Indicator 1 Explain the importance and value of natural and social environments.
	Indicator 2 Distinguish and cost-effectively use depleting and non-depleting natural resources.
	Indicator 3 Explain relationship of seasons and human lives.
	Indicator 4 Participate in rehabilitating and improving the environment in school and in the community.
Grade 3	Indicator 1 Compare environmental changes in the community from the past to the present.
	Indicator 2 Explain dependence on the environment and natural resources in meeting basic needs and livelihood of human beings.
	Indicator 3 Explain about pollution and origin of pollution caused by man.
	Indicator 5 Be aware of the environmental changes in the community.
Grade 4	Indicator 1 Explain the physical environment of the community affective the lives of people in the province.
	Indicator 2 Explain environmental changes in the province and results of such changes.
	Indicator 3 Participate in conservation of the environment in the province.
Grade 5	Indicator 3 Present examples reflecting the results of conservation and destruction of the environment, propose concepts for environment conservation in the region.
Grade 6	Indicator 1 Analyze relationship between natural and social environments in the country.
	Indicator 2 Explain natural transformations in Thailand from the past to the present and the results of such changes.
	Indicator 3 Prepare a plan of utilizing natural resources in the community.

Source: OBEC (2008, p. 185)

Table 4.11 Relevant Indicators for Standard Social Studies 5.2 Grades 7-12

Grade 7	Indicator 1	Explain the effects of natural changes in Asia, Australia, and Oceania.
	Indicator 2	Analyze cooperation between various countries affecting natural resources in Asia, Australia, and Oceania.
Grade 8	Indicator 1	Analyze formation of the new social environment resulting from natural and social changes in Europe and Africa.
	Indicator 2	Specify guidelines for conservation of natural resources and environment in Europe and Africa.
	Indicator 3	Explore and discuss environmental issues and problems in Europe and Africa.
	Indicator 4	Analyze causes and effects on Thailand from environmental changes in Europe and Africa.
Grade 9	Indicator 1	Analyze formation of the new social environment resulting from natural and social changes in North and South America.
	Indicator 2	Specify guidelines for conservation of natural resources and environment in North and South America.
	Indicator 3	Explore and discuss environmental issues and problems in North and South America.
	Indicator 5	Analyze causes and effects on Thailand from environmental changes in North and South America.
Grade 10-12	Indicator 1	Analyze the situations and crises relating to natural resources and the environment of Thailand and elsewhere in the world.
	Indicator 2	Specify preventative and problem-solving measures, roles of organization, and coordinating internal and external cooperation relating to laws on environment and management of natural resources and environment.
	Indicator 3	Specify the guidelines for conservation of natural resources and environment in various regions of the world.
	Indicator 5	Participate in problem-solving and leading lives along the lines of conservation of resources and environment for sustainable development.

Source: OBEC (2008, p. 186)

This review of the Basic Core Curriculum is not exhaustive for the linkages to sustainable development. However, it is evident that the inclusion of climate and the environment in the Science standards are highly concerned with understanding the environment, climate science, and scientific investigation whereas the treatment of the relationship between humans and the environment in the Social Studies standards are more conducive to discussing environmental conservation and sustainable natural resource management. The Science and Social Studies Standards offer opportunities for the topic of climate change to be included in formal education at different levels.

4.3.5 National Child and Youth Policies

The Ministry of Social Development and Human Security (MSDHS) is the responsible agency for the development of children and youth. The National Child and Youth Development Promotion Act (2007) under Thailand's legislative system, defines a child as a person under 18 years of age and a youth as a person between 18 to 25 years of age. The Act ensures that children and youth have the right to education, healthcare, protection, and participation. The establishment child and youth councils at the national, provincial, and district levels also resulted from the Act in order to facilitate implementation of child and youth development measures.

The National Child and Development Promotion Act mandated the creation of a National Commission on the Promotion of Child and Youth Development. The Prime Minister acts as the chairperson while the Minster of Social Development and Human Security acts as first vice chairperson and the Minister of Education acts as second vice chairperson. The Members of the Commission include the Permanent Secretary of the relevant ministries and experts.

Since the 5th NESDP (1982-1986), there have been National Child and Youth Development Plans (NCYDP) that are consistent with the National Economic and Social Development Plans. The focus of each NCYDP was geared towards the focus of each NESDP, while being responsive to the needs of children and youth. The long-term National Child and Youth Development Plan (2002-2011) targeted three aspects, namely 1) the development of desirable characteristics in children and youth, 2) the development of family and community, and 3) the development of management and

administration systems (Office of Welfare Promotion Protection and Empowerment of Vulnerable Groups [OPP], 2012). This plan divides children and youth into two groups according to living conditions (i.e. gifted children, children with special needs and normal children) and age group (under 5 years, 6-14 years, 15-25 years).

In 2007, the National Policy and Strategic Plan for "World Fit for Children" (2007-2016) was formulated and focused exclusively on children under the age of 18 years. These policies were developed in accordance with the guidelines set as a result of the United Nations General Assembly Special Session on Children (UNGASS) in 2002. The goals and targets of the UNGASS and its outcome document, *A World Fit for Children*, highlighted four action including: 1) quality of life, 2) quality of education, 3) protection of children from abuse, exploitation and violence, and 4) prevention of HIV/AIDS (OPP, 2012). Thailand's National Plans of Action for a World Fit for Children (2007-2016) consisted of 11 strategic areas (shown in Table 4.12). In particular, Strategy 9 focused on child and youth participation in learning and decision-making regarding issues that concerned them and the promotion of child and youth associations.

Table 4.12 National Plans of Action for a World Fit for Children (2007-2016)

1. Family	Strengthen family's ability to take care of children; promote enabling environment both economic and social opportunities for family development; and promote services for families with difficulties
2. Physical and mental health	Promote knowledge and skills development and good health; promote understanding of reproductive health, family education, and sex education; improve access to services for children; and promote post-natal care
3. Safety and prevention of injuries	Disseminate knowledge to parents, teachers, communities, and organizations on safety promotion and prevention of injuries

(table continues)

4. Children and HIV/AIDs	Ensure that those concerned with children have correct understanding of problems associated with HIV/AIDS and do not have inhibition against people living with HIV/AIDS, particularly children
5. Education and children	Campaign to ensure children in every locality receive age-appropriate education
6. Children and recreation	Promote knowledge on recreation among parents, child-related professionals, community, and society in general
7. Children and culture and religion	Instill correct understanding of the true meaning of "national culture"; inculcate positive cultural values and adherence to religious principles
8. Media and children	Promote the knowledge and understanding of child rights principles among the media and improve access for children to creative media
9. Child and youth participation	Promote participation of children in learning and decision-making of any matter concerning themselves; promote child and youth association and child organizations
10. Special protection for children in need of special protection	Ensure that they receive all necessary services and promote specialized knowledge and skills for child minders and professionals involved with these children
11. Laws and regulations	Revise, amend, and introduce legislation, regulations and rules to improve protection for children and ensure effective enforcement

Source: OPP (2012)

The Ministry of Interior had implemented the child-friendly city scheme. A National Committee for the Promotion of Child-friendly Cities was established along with a corresponding Committee for the Development of Strategy for the Promotion of Child-friendly Cities at the provincial level. The Provincial Strategic Plans on Child and Youth-friendly Cities (2007-2016) focused on implementing actions at the provincial

level. To consolidate efforts and provide greater consistency for implementation, the National Policy and Strategic Plan for "World Fit for Children" and the Provincial Strategic Plans on Child and Youth-friendly Cities were consolidated into one plan (OPP, 2012).

Subsequently, the National Child and Youth Development Plan (2012-2016) was developed. It was approved by the National Commission on the Promotion of Child and Youth Development on 19 January 2011 and the Cabinet in 3 May 2011. The NCYDP provides a framework for the development of children and youth that aligns with the 11th NESDP. The Plan takes into account international obligations to the CRC based on four principles, namely 1) non-discrimination, 2) best interests of children, 3) the rights to survival and development, physically, psychologically, emotionally, and socially, and 4) the right to participation and self-expression (OPP, 2012). The NCYDP has a vision for children and youth to lead secure, healthy, happy, and creative lives. The Plan also provided measures for monitoring and evaluation in order to access progress on implementation of actions in four strategic areas (see Table 4.13).

Table 4.13 Four Strategic Areas of National Child and Youth Development Plan

Strategy 1	Increase life immunity in children and youth
Strategy2	Protection and development of children in need of special protection measures
Strategy 3	Capacity-building of alliances for child and youth development
Strategy 4	Improvement of the administration and management system for child and youth protection and development

Source: OPP (2012, p. 48)

In addition, the NCYDP discussed four measures to promote participation of children and youth. These measures included the promotion of "civic mind in children and youth and its integration into school curriculum" and "child and youth association and creative activities to encourage contributions to society and a sense of self" (OPP, 2012, p. 66), which could benefit citizenship and youth agency. Other measures sought to develop communication processes to facilitate knowledge sharing among child and youth organizations and recognize children and youth who have made positive

contributions to society. A summary of national youth policies, the chronology of the various national plans and policies on children and youth are depicted in Figure 4.5

<table>
<tr><th>Year</th><th colspan="3">Plan and Policy</th></tr>
<tr><td>2002</td><td rowspan="10">National Child and Youth Development Plan</td><td colspan="2" rowspan="5"></td></tr>
<tr><td>2003</td></tr>
<tr><td>2004</td></tr>
<tr><td>2005</td></tr>
<tr><td>2006</td></tr>
<tr><td>2007</td><td rowspan="10">Provincial Strategic Plans on Child and Youth-friendly Cities</td><td rowspan="10">National Plan of Action for “a World Fit for Children”</td><td>National Child and Youth Development Promotion Act</td></tr>
<tr><td>2008</td><td rowspan="4"></td></tr>
<tr><td>2009</td></tr>
<tr><td>2010</td></tr>
<tr><td>2011</td></tr>
<tr><td>2012</td><td rowspan="5"></td><td rowspan="5">National Child and Youth Development Plan</td></tr>
<tr><td>2013</td></tr>
<tr><td>2014</td></tr>
<tr><td>2015</td></tr>
<tr><td>2016</td></tr>
</table>

Figure 4.5 Chronology of plans and policies for children and youth.

4.4 Policy Review Findings

The policies and plans at the international, regional, and national relevant to the main research themes of sustainable development, climate change, disaster management, education, and youth reviewed in this chapter provides a solid foundation for understanding the existing political frameworks. This section provides a summary of the key findings from the policy review at international, regional, and national levels.

Youth feature in international policy related to sustainable development, climate change, education, and disaster management to varying degrees. For sustainable development, youth are recognized in *Agenda 21*, JPOI, and *The Future We Want* as a major stakeholder group. Youth participation in international negotiations on

sustainable development occurs via the Major Group of Children and Youth (MGCY) and various youth consultation processes. Goal 13 of the SDGs on taking urgent action to combat climate change and its impacts provides a clear linkage between sustainable development and climate change. However, youth participation is only mentioned in the context of least developed countries and small island states. The remainder of the mentions of children and youth in the SDGs concerns initiatives on education and poverty alleviation.

Within international climate change policy, commitments to educate and engage stakeholders through education and training are included in Article 6 of the UNFCCC and Article 10 of the Kyoto Protocol. Youth were specifically included in Decision 15/CP.18 on Article 6 of the UNFCCC, which recognizes youth as a stakeholder for active participation and target for education on climate change. The United Joint Framework Initiative on Children, Youth, and Climate Change and YOUNGO, the youth constituency, work to enhance the participation of children and youth in the UNFCCC process. The inclusion of climate change as part of the sustainable development agenda in both *The Future We Want* and the SDGs, is a positive thrust for increased coherence between climate change and sustainable development policy.

Education is a major strategy for developing knowledge, skills, values, and attitudes in society to transition to more sustainable development pathways. Sustainable development policy has promoted the reorientation of education at all levels through ESD. These efforts were highlighted during the UN DESD. After the DESD ended in 2014, the GAP on ESD seeks expand action on ESD and promote sustainable development. Within the GAP, Priority Action 4 identifies youth as a stakeholder for empowerment and mobilization. Strategies to engage youth include the use of information and communication technologies and enhancement of non-formal and informal learning opportunities. The GAP and ESD explicitly includes youth in the educational and capacity building strategies related to sustainable development.

Regarding international disaster management policy, children and youth are recognized as stakeholders and change agents in the HFA and Sendai Framework. Educational initiatives on building awareness and capacity for DRR are promoted within these

frameworks. The HFA were instrumental in launching significant efforts for DRR in the education sector for the protection of vulnerable groups, including children and youth. The Sendai Framework made strong arguments for enhancing coherence on sustainable development, climate change, and DRR in the post-2015 development agenda in order to build resilience and alleviate poverty.

The Southeast Asian regional policies on sustainable development, climate change, disaster management, and youth were considered the context of ASEAN. Various aspects of sustainable development are including under the three pillars of ASEAN, namely the AEC, ASCC, and APSC, and the corresponding Blueprints offer actions in these areas. The ASCC Blueprint provides the D10 actions on climate change, including the development of the ACCI to support regional coordination on climate change. The actions encourage awareness-raising, advocacy, and participation to address climate change impacts. The inclusion of climate change in the ASCC Blueprint confirms its importance in regional policy. Although youth are mentioned in the ASCC Blueprint in relation to education and human development, there are no linkages to climate change and sustainable development.

Youth are stakeholders and beneficiaries of the regional initiatives on environmental education and DRR in the education sector, namely the AEEAP and AADMER. The AEEAP promotes sustainable development through environmental education that explicitly includes youth under the focus areas on non-formal education, capacity building, and networking and partnerships. Based on the APSC Blueprint, the AADMER prioritizes the safety of educational infrastructure and protection of children in disaster events as well as education on DRR for building awareness and resilience of communities. Public participation in DRR is encouraged, although youth are not explicitly mentioned. Both the AEEAP and AADMER work to foster regional and institutional capacity in the education sector related to their respective mandates.

Compared to international and regional policies, there is less coherence between the policies on sustainable development, climate change, and disaster management in Thailand. The 11th NESDP concentrates on the concept of sufficiency economy to advance sustainable development and asserts the significance of responding to climate

change in Thailand. The climate change policies reinforce action on mitigation and adaptation, including awareness-raising and participation. Likewise, the NDPMP acknowledges linkages between disasters and climate change. The need for awareness-raising and education on DRR is emphasized as part of building response capacity. However, the national consultation on DRR in the education sector established that there are major gaps for implementation, such as the need for technical support, training, and budget allocation. Overall, these policies demonstrate progress on the integration of various international policies and commitments at the national level.

In regards to youth in national policies, there is limited inclusion of youth in policies that are not specific child and youth policies. Youth are not recognized as stakeholders within national policies on sustainable development and climate change; with only a minor mention in disaster management. These national policies represent an obstacle to youth participation in climate change and sustainable development due to the lack of youth mainstreaming. The educational and youth policies were more concerned with developing youth in terms of their rights to safety and provision of services, such as health, education, and social welfare. These policies are important in the advancement of youth potential and building knowledge, skills, and capacity to participate in climate change and sustainable development. In order to advance action on Decision 15/CP.18 on Article 6 of the UNFCCC, there are two issues in national policy need to be addressed 1) youth inclusion into climate change and sustainable development policies, and 2) the inclusion of education and youth policies into climate change and sustainable development policies. These measures would increase coherence in national policies on efforts to provide education on climate change and opportunities for participation in decision-making and implementation of responses to climate change, which aligns with the Doha Work Programme on Article 6 of the UNFCCC.

Based on the findings of the policy review, a summary of recent national policy and plans related to the research objectives of this study is provided in Table 4.14.

Table 4.14 Summary of National Policies Relevant to Climate Change and Youth Participation in the Context of Sustainable Development

Policy/Plan		Sustainable Development/Climate Change	Youth/Education
Sustainable Development	11th National Economic and Social Development Plan (2012-2016)	• Sufficiency economy, sustainable production and consumption, environmentally-friendly and low carbon society • Climate change viewed as a threat, need capacity to adapt to climate change impacts	• Education regarded as a social service based on fundamental rights and to promote lifelong learning • Empowerment of youth mentioned for making valuable contributions
Environment and Climate Change	Environmental Quality Management Plan (2012-2016)	• All six goals are linked with environment and sustainable development • Goal 4 on creating resilience to climate change and natural disasters	• No mention of youth in relation to sustainable development or climate change
	Climate Change Master Plan (2015-2050)	• Climate change adaptation, climate change mitigation, capacity building for the management of climate change	• Youth mentioned under target group of educational institutions and academia • Promotes inclusion of climate change in educational curriculum on environment and extra-curricular activities for youth
Disasters	National Disaster Prevention and Mitigation Plan (2010-2014)	• Climate changed discussed under principles of disaster management as contributing to disaster situation • Sustainable development mentioned in post-disaster Management	• Children identified as a vulnerable group, youth targeted for training as disaster volunteers • Awareness-raising through disaster education curriculum at all levels
Education	Basic Core Curriculum (2008)	• Standard Science 2.1 (Grade 3, 6, 9-12), Standard Science 6.1 (Grade 6-7), Standard Social Studies 5.2 (Grade 1-6, 7-12)	• Targets children and youth in formal education
Youth	National Child and Youth Development Plan (2012-2016)	• No mention of sustainable development and climate change • Sufficiency economy mentioned as foundation for development of children and youth	• Based on principles of the United Nations Convention on the Rights of the Child • Four measures to promote participation of children and youth

CHAPTER V
RESEARCH FINDINGS AND DISUCSSION

This chapter presents findings from this research conducted between June and December 2014. A summary of the stakeholder interview respondents is provided prior to a discussion of the major themes from the key informant, youth and expert interviews. The chapter concludes by presenting the model for youth participation developed based on the research findings as a way to increase effective youth participation in responding to climate change in the context of sustainable development in Thailand.

5.1 Stakeholder Interview Respondents

There were a total of 51 respondents interviewed during the data collection phase. There were three rounds of interviews between June and December 2014. The expert interviews were conducted during the third round of interviews between November and December 2014, in order to obtain feedback on initial findings from key informants and youth interviews.

Of these stakeholder interviews, 30 were key informant interviews representing 28 organizations (63.8%), five were expert interviews (10.6%), and 12 were youth interviews (25.5%). For three of the interviews conducted, there were multiple respondents. There were two key informant interviews that had two respondents from the same organization. There was also a single organization that had the key informant interviews, each with a single respondent. For this particular government agency, three different respondents provided viewpoints from three different levels of operation.

Table 5.1 provides a summary of the respondents by sex for the different types of stakeholder interviews conducted. There were a total of 51 respondents, 21 male and 30 female. For the 32 key informant interviews conducted, 11 of the respondents were male (43.8%), and 21 were female (65.6%). For the expert interviews, three of the experts were male (60%) and two were female (40%). There were an equal number of male and female youth respondents, seven male (50%) and seven female (50%). When

categorized by age, 21.4% of the youth respondents were 15-17 years old, 28.6% were 18-21 years old and 50.0% were 22-24 years old, or three, four and seven respondents, respectively.

Table 5.1 Stakeholder Interview Respondents by Sex

Categories	**Male**	**Female**	**Total**
Key Informants	11	21	32
Intergovernmental Agencies	1	1	2
Governmental Agencies	2	6	8
Non-Profit Sector	7	12	19
Media	1	2	3
Youth	7	7	14
15-17 years old	2	1	3
18-21 years old	2	2	4
22-25 years old	3	4	7
Experts	3	2	5
Total	21	30	51

The language used during the interview depended on the respondent's preference. For the 47 conducted interviews, 34 were conducted in Thai (72.3%) while 13 were conducted in English (27.7%) as summarized in Table 5.2. For six key informants in organizations in the non-profit sector and intergovernmental agencies, the respondent's preferred language was English. Three of the experts preferred to converse in English while the remaining two experts preferred to converse in Thai. For the youth interviews, seven of the interviews were conducted in Thai while the remaining five interviews were conducted in English. Some of the respondents remarked that they were equally fluent in Thai and English but remarked that it would be easier to use English terminology. Since all interviews were transcribed in English, any interviews conducted in Thai were translated for overall meaning during the transcription process. For all of the interviews conducted, detailed notes were taken during the interview. These notes were later typed and coded for further analysis. All of the interviews conducted were also recorded.

Table 5.2 Language of Interview by Type of Respondent

Respondent	Thai	English
Key Informants	24	6
Experts	3	2
Youth	7	5
Total	34	13

5.2 Key Informant Interview Findings

In this section, the findings from the key informant interviews are presented in relation to the research objectives. The discussion of these findings focuses on the main sections of the key informant interviews, namely 1) primary programs and activities related to climate change, 2) youth policies, and 3) youth engagement and participation strategies. The emergent themes that resulted from data analysis are also introduced. Lastly, the challenges for implementation of youth participation in responding to climate change mentioned by key informants are highlighted.

5.2.1 Primary Programs and Activities Related to Climate Change

The organizations selected to be part of the sample for key informant interviews varied greatly in terms of type of organization as well as mission and focus of the organization. As a result, the types of activities that the organizations engaged in also varied often with more than one type of activity, target group or approach. This meant that one organization could provide multiple responses to many of the questions asked regarding their programs and activities. The respondents were from agencies and organizations related to environment, climate change, development, child and youth, and education provided insight from a stakeholder's perspective.

The primary programs and activities of the organizations represented by the key informants ranged from focusing on environmental education, community development, youth development, disaster management, research, and policy. The most common approach used in the organizations was environmental education in various settings including communities, learning centers, national parks, schools, and universities. Four organizations were involved in waste management issues, such as

waste separation and waste reduction initiatives, often using an environmental education approach. Five of the organizations also focused on volunteerism while four organizations emphasized youth development. Four of the organizations were involved in research and policy aspects of environment, development, or youth.

For programs specifically related to climate change, the key informants reported that their organizations engaged in activities related to education, ecosystem restoration, disaster management, mitigation, adaptation, research, and policy. The educational activities were mostly related to environmental education, education for sustainable development (ESD), and climate change education (CCE). The primary ecosystem restoration activity reported was tree plantings, although three organizations focused on conserving and restoring the environment in order to ensure sustainable livelihoods of the local community. Seven organizations stated that they had activities related to climate change adaptation. These activities ranged from ecosystem restoration, community development, disaster management, and research. Six organizations engaged in climate change mitigation activities, such as conserving carbon sinks and biodiversity, greenhouse gas management, and research. These organizations promoted tree plantings as an easy and accessible way to increase carbon sinks to mitigate climate change. In regards to policy, four of the organizations emphasized advocacy for children and communities that are vulnerable to climate change impacts as well as sharing findings from research to support policy.

Based on the responses provided by the key informants, the overlapping nature of the organizations' programs on climate change is evident. This is not surprising given the interlinked nature of environment, development, and climate change. In some cases, the respondents noted that the activities were more heavily focused on the environment than climate change. Similarly, three of the respondents indicated that their programs emphasized disaster management more than climate change adaptation. Therefore, the information reported by the key informants does not necessarily provide information on the priority or importance of climate change activities within the organization.

5.2.2 Youth Policies

Twenty-eight of the organizations were reported by key informants to have programs and activities directly related to youth to some extent. The involvement of young people was more apparent in activities and programs at the local level with organizations from the non-profit sector as stated by Head (2011). Ten of these organizations involved youth using an environmental education approach. These activities took place in different locations, depending on the purpose and context of the activities. Many of these organizations provided services related to teaching young people about the environment with six of these organizations also providing on teacher training and curriculum development. Six of these organizations employed citizen science or community investigation to get youth to explore local community problems and potential solutions. In a few instances, youth received small funds to engage in research activities in their schools or communities.

Organizations also involved youth in activities that occurred less frequently, such as special events and camps. The key informant elaborated that their organizations may participate in occasional or annual events including: school fairs, Earth Day, World Environment Day and National Environment Day. Seven of the organizations offered multi-day youth camps focused on nature and the environment. In some cases, the organization did not hold camps regularly, but as an infrequent occurrence such as an annual youth camp that focused on a particular theme. These youth camps served training and communication purposes for various initiatives, especially when participants came together from different regions.

Five of the key informants reported that their organizations emphasized aspects of volunteerism. The main focus of these organizations varied from community development, activism, waste reduction, tree planting, disaster recovery and health issues. Moreover, these key informants stressed the importance of young people volunteering and taking action on environmental and societal concerns.

Three of the organizations focused heavily on community and local development. While these community-focused organizations used a holistic approach to development, children and youth were considered to be an important stakeholder in the

community. The issues addressed by these organizations ranged from health, education, sustainable livelihoods, ecosystem restoration, disasters, and climate change adaptation. In addition, two organizations were child protection organizations that sought to ensure safety and well-being of children and youth in the face of disasters and climate change impacts. These organizations had been involved in recovery efforts after the Indian Ocean tsunami in 2004 and later applied similar strategies in coastal communities in disaster management and climate change adaptation programs.

Only a limited number of the organizations engaged youth as interns in their organizations. Two key informants and one expert discussed the opportunity for youth to participate in internships. These respondents indicated that the youth would gain knowledge and skills during their internship while supporting the objectives of the organization. In particular, two of these respondents recounted incidents where interns were able to share information with children and youth as they led activities about environmental education and sustainability.

Not all of the organizations had activities directly related to youth. Two key informants from the non-profit sector stated that youth were the implicit beneficiaries of their activities. A couple of the organizations with technical and research activities described their organization's involvement in informing and awareness efforts, usually in collaboration with other organizations. Six key informants and one expert described the need to partner with organizations with expertise working with youth or to develop skills within the organization if they were to have activities with youth. This reflected a need for capacity building or partnership to facilitate effective youth engagement.

Five organizations mentioned the use of competitions or contests to involve youth. These competitions solicited submissions from youth in the form of drawings, photographs, videos, and essays. One key informant from the non-profit sector recounted that videos made by youth and submitted to a competition were used to show workshop participants how to reduce food waste prior to lunch. The winners of these competitions would receive recognition and their work would be put on displayed or shared. These responses illustrate low levels of youth participation in organizations that were not youth-focused.

The responses given by key informants indicated that their organizations held similar views of youth despite the variability of these organizations in other aspects. Nine organizations viewed youth as the future citizens and next generation of society. The decisions that youth made throughout their lives were seen as important, including their lifestyle and political choices. The key informants described youth as having an important role within their communities. These respondents said youth had access to more information and better technology skills than older generations. Six key informants expressed the need to empower youth with the knowledge and skills to become active and informed adults. These responses indicate the generally held view of youth as future members of society by the key informants interviewed.

Regarding the involvement of youth in their programs, nine key informants described different messages their organizations tried to communicate to youth. In addition, eight key informants discussed awareness-raising as an important aspect of their youth programs and activities. One of common messages centered on providing inspiration to youth by providing adult role models or examples of active youth as a motivation to take action. Another message that was communicated was that a person could make a difference by taking small, easy actions. This message hoped to counter the feeling that taking action is difficult or requires too much effort. Lastly, another main message that organizations attempted to communicate was to do good deeds for the environment and society. These good deeds could begin with individual action or changes in behavior. All of these messages had a shared goal of making youth feel that their actions were important contributions to changing the world.

5.2.3 Youth Engagement and Participation Strategies

Approach Towards Youth Involvement

In the selection of target groups to work with in their programs and activities, three key informants explicitly stated that their organizations worked with youth because there activities were more likely to influence them. Two key informants from organizations that have environmental education activities remarked that they work with children and youth because they can change their thoughts and behavior. In contrast, adults are more fixed in their habits and it is more difficult to alter their attitudes and mindsets. Another

key informant that worked with children and youth as well as adults commented that the children have more knowledge and understanding about environmental problems and climate change than many adults. By working with young people, these organizations reasoned that they would be more successful in creating change agents for the next generation.

The approaches used by the organizations to engage youth differed greatly. At an institutional level, the key informant of 11 organizations indicated that there was no department responsible for working specifically with youth. The remaining 19 organizations had a department that was responsible for working with youth. These departments could be related to education, capacity building, outreach, or children and youth specific divisions. In a number of cases, there was no specific department since the entire organization was engaged in activities related to children and youth.

When asked about the organization's approach to involving youth, the respondents described youth involvement in the organization's general programs as well as those specifically targeting children and youth. Seven key informants commented that providing knowledge and building capacity for youth were highly important aspects of their approach to working with youth. Ten respondents emphasized voluntary youth participation and practical action as essential aspects for engaging youth and creating ownership, particularly those from community development and child protection organizations. One key informant from a non-profit organization stated that all of their community development activities involved children and youth to some degree since it was a requirement of their programs. Other approaches that were commonly used were environmental education and experiential learning that often entailed investigation of real problems as part of the learning process. The remaining 11 key informants did not respond or the question was not applicable to the organization.

These approaches for engaging youth were described as very different from the typical classroom setting. One aspect of the approach of environmental education that the respondents described was the effort to make learning fun and applicable through hands-on interactions with the environment and communities. The activities typically occurred outdoors, on school ground, national parks, or reserves, although many

organizations stated that their programs were often supplemented by pre- and post-activity by classroom teachers. For the organizations that provided services related to environmental education activities, some key informants mentioned positive feedback from teachers that their students were highly interested and motivated to participate in the activities. Seven key informants considered environmental education and a very effective approach for engaging youth that emphasizes an integrated learning process to develop knowledge and understanding of the issues being explored.

One key informant from the non-profit sector, one government agency and two experts stated that environmental education and ESD remains marginalized in non-formal and informal education settings. Nine key informants from organizations in the non-profit sector described activities with youth at the community level or supplemental activities in schools. Moreover, a key informant from an intergovernmental agency and an expert on youth noted that there were numerous good practices from the non-formal and informal settings. Related to the non-formal education system, a key informant from a government agency remarked that there were challenges working with youth in non-formal education since most of the youth worked and did not have time to be involved in extra activities. In general, environmental education and ESD activities in the formal education sector were viewed as supplemental, such as extra-curricular activities and camps that were not consistently provided.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The key informants reported on the feedback provided by youth regarding the activities they participated in. The majority of the feedback seemed to be positive and reflected the success of the approaches used to engage youth. Five key informants remarked that initial feedback could be seen in the facial expressions and remarks made by youth during and after the activities. Three respondents noted that youth would ask questions based on what they observed during the activities, which indicated their interest in the activities. The respondents also explained that youth gained knowledge, awareness, and understanding as a result of their participation in the activities. Two key informants and one expert related the importance of building rapport with youth in a comfortable atmosphere so that youth feel at ease in speaking their mind and sharing their thoughts. This focus on individual level outcomes agrees with findings from the literature on youth participation described by Youniss et al. (2002). Beyond these informal feedback

from youth, many of the key informants reported that their organizations had formal evaluation processes at the conclusion of their activities for reporting and program improvement purposes.

Occasionally, feedback from youth was received months and years following their participation in different activities. Seven key informants described youth that returned after a few years as volunteers or to perform independent research projects with the organization. In some instances, the youth would start their own initiatives or lead activities for children and youth. A key informant from a few government agencies noted that some youth that had done trainings and workshops with them even changed their intended career path to scientific and environmental fields after their involvement in environmental education activities. These responses suggest that the activities had lasting effects on the mindset, attitudes, and behaviors of individuals.

Not all of the feedback from youth was positive as the youth also provided input on their dislikes and areas that they felt needed improvement. Four key informant described instances were youth were not interested or motivated to participate in the activities. In these cases, the respondents noted that it was not possible to predict the long-term effect of the activities on the individual. One respondent remarked that even with these reluctant youth, it was important to involve the individual as much as possible so that they would not make them have negative associations with the experience. Many of the organizations reported a strategy of working with youth who had volunteered and were motivated to participate in the activities since this guaranteed more successful outcomes.

Feedback from youth involved in the organizations' activities was used to improve programs to match the needs of youth. The key informants from organizations that worked primarily with children and youth described the importance of getting youth input so that activities could be designed based on youth interest. A few key informants explained that youth suggestions were taken into consideration when deciding themes and components of workshops and camps. Two key informants from the media noted that youth often requested topics for articles and these suggestions were used when developing future issues. However, one key informant from a government agency

commented that some requirements of the program had to remain even if youth disliked them but that the delivery or approach towards the component could be altered to be more engaging for youth. Four key informants also noted that many Thai youth lacked critical thinking skills that are important for problem solving and issue analysis. In response, these organizations would provide additional training on these aspects to facilitate their work with youth. Essentially, the organizations considered youth feedback to be important for responsive program design in activities targeted at youth.

Youth Participation in Organization

The key informants described the participation of youth, both in terms of involvement in decision-making and opportunities to develop and lead their own programs. The majority respondents reported that youth had limited involvement in the policies of the organization compared to programs and activities. At the institutional level, mechanisms for acquiring and integrating youth input into the organization's policies and programs seemed lacking. Only one key informant from an organization focused on child protection described efforts to hold a youth forum as a step towards developing a Youth Advisory in the coming year. In contrast, a few key informants mentioned mechanisms within their organization for youth to provide input on the programs that had been involved with. Seven respondents remarked that youth would give input on their likes and dislikes regarding the activities, either in a formal or informal manner. These mechanisms were seen as important for program improvement and to further addressing the needs of youth.

Within the context of programs and activities, the respondents described the ability of youth to develop and lead their own programs. In fact, many of the programs emphasized the development of skills for youth to think on their own, create action plans and follow through on proposed plans. These programs typically had a facilitator or mentor that worked with the youth to provide advice and guidance.

Although the Shier's 'Pathway to Participation' element of the key informant interviews was not conducted, the majority of these organizations appeared to be on the first, second, and third levels of participation (see Figure 2.4). Due to the variety the organizations, some organizations had limited youth participation, such as contests and

competitions, while others had more advanced youth participation that enabled youth to express their views and lead their own activities. Hence, it appears that most of the organizations that focused on youth achieved the minimum levels of youth participation according to the Convention on the Rights of the Child (CRC). Within the context of their programs, some organizations may reach the fourth and fifth levels of participation where youth share power with adults and are involved in decision-making processes. However, none of the key informants reported youth were engaged in higher levels of participation at the organizational level.

Considering the three-lens approach to youth participation proposed by the World Bank (2007) depicted in Figure 2.2, the majority of these organizations engage youth as beneficiaries or partners, corresponding with the first and second lens of the model, responsively. As described previously, the organizations that had limited activities involving youth viewed youth as beneficiaries of their programs. In contrast, the organizations that had more extensive activities with youth usually engaged youth as partners in various program activities. These key informants described initiatives that sought to develop and promote youth leadership in their schools and communities that would align with the third lens of the model. As noted by the World Bank, these lenses should not be mutually exclusive and any given organization can use different and multiple lenses when working with youth. Therefore, the efforts to engage youth in participatory activities should be seen as dynamic and changing according to the context and the organization's capabilities. The responses given by key informants described various approaches to engaging youth depending on the context and goals of the activities.

The key informants reported that their organizations often collaborated and partnered with other organizations when working with youth. Depending on the objectives and approach used by the organization, the partners ranged from schools, communities, local government, corporate sector, central government, and international organizations. The scope and target of the programs determined which organizations they collaborated with. Indeed, these organizations appeared to work at different levels with different stakeholders. Fifteen respondents mentioned various networks that their organizations used to facilitate communication and implementation of their programs.

Six of these organizations eco-school and green school networks. In many instances, the key informants indicated that international organizations and the corporate sector acted as donors and provided funds for their programs.

Youth Participation in Climate Change Activities

Youth involvement in climate change activities were described as a subset of the general programs that the organizations had with youth and other target groups. Ten respondents emphasized activities that sought to develop the mindset within youth to value the environment and natural resources. The activities themselves ranged from conservation, ecosystem restoration, community investigation and citizen science, waste management, and disaster management. Since the general approaches and activities utilized by the organizations have been described previously, this section discusses the findings concerning climate change and sustainable development.

Many of the organizations that utilized an environmental education approach towards youth participation used conservation and ecosystem restoration activities to involve youth. Common activities for engaging youth were tree plantings, check dam building, and trash clean ups in which youth had hands-on experiences in natural settings. As part of the process youth engagement in these activities, the purpose and benefit of performing these activities was explained to youth since knowledge and understanding was viewed as important for increasing awareness. For example, at a mangrove tree planting youth are told of the mangrove forests' function as a wave break and protection from storm surges to reduce coastal erosion. These ecosystem restoration activities frequently required participants to travel to the activity site and were not part of their daily lives.

The key informants from seven organizations and one expert noted that youth needed to have deeper understanding of the benefit of natural resources in their daily lives and the linkages between the environment, society, and the economy. These key informants explained that youth needed to see the importance of the resources they used in their daily lives and the impact that they had on the environment through this consumption. This was especially relevant for youth who lived in urban areas as four key informants mentioned that many of these youth lacked experiences and understanding of nature. In

particular, one key informant from the non-profit sector explained that urban youth were a key target group in their programs since the consumption patterns of this group were much higher than their counterparts in rural areas. One common aspect of these activities is that youth were encouraged to develop habits and behaviors in the context of their daily lives. By raising awareness about the importance of environment and natural resources, the organizations worked to increase environmental concern in youth, and promote sustainable consumption.

Three respondents and one of the experts interviewed noted that many schools in Thailand had developed recycle bank activities to teach students about waste separation and recycling. However, the three key informants lamented that these initiatives had mixed results when considering sustainable consumption since efforts were not made to reduce consumption and instead focused on economic incentives for behavior change. This was attributed to the desire to achieve tangible results by focusing on the recycling aspect of the 3 Rs (Reduce, Reuse, Recycle). A key informant from a government agency explained that although it is harder to demonstrate the outcomes, waste management initiatives in schools should focus on decreasing consumption by focusing on reducing and reusing resources, rather than recycling. It was further elaborated that the challenges of transitioning from existing environmental education programs in Thai schools to ESD would require re-teaching teachers and administrators on aspects of sustainability.

The organizations that had programs on disaster management described the involvement of children and youth in disaster risk reduction (DRR) and disaster risk management (DRM). Five organizations delivered trainings for teachers and students in schools that were vulnerable to disasters. Three of these key informants discussing these programs remarked that the communities they worked with were aware of environmental changes occurring, particularly for those involved in agriculture and fisheries, since it impacted their livelihoods. These programs were primarily located in coastal areas in eastern and southern regions of Thailand. The key informants indicated that many of these programs were initiated due to increased donor funding after disaster events, such as the 2004 tsunami and floods in 2011.

These DRR and DRM programs worked with children and youth in school and community settings to increase local capacity to respond disasters. Four key informants from the non-profit sector and one expert described the process of involving children and youth in disaster management by first providing information on their rights to life and survival. Initially, the children and youth did not understand how their rights were linked with the environment, but gradually began to comprehend that there was increased risk due to disasters. In contrast to urban youth, these youth were more aware of the seasonal and environmental changes around them. A component of the activities usually entailed youth learning about the social and physical resources, as well as specific issues, in their communities and later sharing their findings with the community. In some instances, the organizations used youth-centered participatory video making techniques as part of this process in a manner resembling that described by Haynes and Tanner (2015). An expert in child rights noted that it was important to get input from children and youth since they were the most vulnerable groups in disaster situations and they experienced their world differently than adults.

While the organizations focused on building youth capacity, the adults in the community did not necessarily believe in the capabilities of young people. A key informant remarked that many adults in the community did not think children and youth were capable of engaging in the activities. However, when the outcomes were shared with the communities, the adults were often surprised at the vulnerability maps, action plans, and videos developed by the children and youth. Community leaders could use these outcomes and local government to include youth input into community actions plans. By developing the knowledge and participation skills in youth, the organization attempted to increase the safety and security of the community.

One key informant from a government agency described the inclusion of youth in international climate activities. Two youth had been selected to be part of the Thai national delegation to 19th Session of the Conference of the Parties, or COP19, in Warsaw in November 2013. Both of the youth participants were female upper secondary school students that had been chosen as the winners of on essay contest. Written feedback from the two participants was obtained that recounted their experiences, likes and dislikes and what they learned during their experience at COP19.

When asked about more recent efforts for youth participation, the respondent identified budgetary issues as a limitation to including youth representatives in international climate change events.

Specifically related to knowledge on climate change, several key informants described the challenges of increasing youth understanding of climate change and associated impacts. A few respondents commented that youth are generally familiar with slogans and campaigns concerning global warming, saving energy, plastic bag use, etc. However, most youth did not have in-depth understanding of the causes and consequences of climate change. These remarks concur with those made by key informant regarding youth's understanding of climate change. While awareness-raising campaigns and media on climate change succeeds in increasing familiarity with terms and behaviors associated with climate change mitigation, they appear to fail in providing adequate knowledge of climate changes causes and consequences needed for informed participation in climate change issues. This suggests that educational and media strategies used for increasing knowledge and awareness of climate change in youth should be more comprehensive in its content with a focus on how to respond to the impacts of climate change.

5.2.4 Emergent Themes

Aside from the three main sections of the key informant interview protocol discussed previously in this chapter, the analysis of the key informant interviews revealed several emergent themes related to the research topic. These themes include the lack of clear national policy, sufficiency economy and Buddhism, regional level initiatives, and youth development and youth leadership. This section presents and explores the emergent themes in relation to youth participation in climate change and sustainable development issues in Thailand.

Lack of Clear National Policy

The climate change policy and development plans in Thailand do not to acknowledge youth as a major stakeholder for the future. Neither the Climate Change Master Plan (2015-2050) nor 11th National Economic and Social Development Plan (NESDP)

(2012-2016) address the issue of youth participation in decision-making and policy-making regarding climate change and sustainable development. Specifically related to education for sustainable development, which encompasses environmental education and climate change education, one of the key informants confirmed that there is a lack of an overarching framework on education for sustainable development (ESD) that results in the failure to integrate ESD into the national educational standards and related curriculum. Although the Climate Change Master Plan does mention youth in regards to the inclusion of climate change in environmental education at all levels and extra-curricular activities, these are not activities that support higher levels of youth participation in responding to climate change issues. The lack of clear national policy on youth in climate change and ESD represent major structural barriers for coherent implementation of programs related to youth participation in climate change and sustainable development.

As a consequence, the study found that there is overlap in activities related to ESD and environmental education by the Ministry of Natural Resources and Environment (MoNRE) and the Ministry of Education (MOE). The Department of Environmental Quality Promotion (DEQP), within the MoNRE, is the main implementing organization for building environmental awareness for the public. The study found that the DEQP is seen as a government agency that tries to build capacity for environmental education through its various initiatives with schools, teachers and students, such as an eco-school network, citizen science, and green scout activities. The MOE also works to build capacity of teachers and schools under the jurisdiction of the Office of Basic Education Commission (OBEC) using environmental education to approach ESD. Both the MoNRE and MOE provide trainings on pedagogy and curriculum development to schools within its network as well as organize youth camps and citizen science activities for students.

The lack of coordination between the MoNRE and the MOE and the overlap in their programs was noted by six key informants and two experts interviewed. Neither ministry appears to focus on climate change education (CCE) per se, but emphasizes environmental education and ESD. A few key informants also indicated the failure to mainstream environmental education and ESD into the education system since the

MOE is the main educational authority and the MoNRE is mandated to build environmental awareness among the public, not only children and youth. Furthermore, the MoNRE and MOE have limited staff and capacity to implement large-scale programs on environmental education and ESD. Thus, the majority of the approximately 30,000 schools under the jurisdiction of the OBEC have not been reached by the capacity building efforts on environmental education or ESD by either the MoNRE or the MOE.

The fragmented implementation of environmental education and ESD by government agencies and the non-profit sector has resulted in redundancy in programs and activities. This redundancy was generally viewed in a positive manner since it reflected efforts to expand environmental education and ESD programs as well as capacity building in schools, teachers, and students. Moreover, the programs described by the respondents used similar approaches and strategies. For example, many of the organizations held trainings for teachers and facilitators, utilized community investigation and citizen science, focused on the scientific process, and had eco-school and green school networks. Seven key informants also mentioned the development of environmental education, DRR, and climate change adaptation curriculum that were shared with their networks and the MOE for greater distribution. To aid standardization of programs, two key informants emphasized the need to provide indicators for monitoring and evaluation in the area of ESD. With a clear national policy and more coordinated approach towards environmental education and ESD, there is the potential to leverage existing capabilities and resources within various organizations and agencies for more streamlined and synergized efforts at all levels.

A key informant from a governmental agency in the health sector suggested a strategy for overcoming the limitations of the rigid institutional structure of the education system. This respondent's agency employed a strategy of developing model schools as practical examples in order to catalyze change within the existing educational system. The model school would then support the development of newer schools and the creation of a network between these schools facilitates communication and sharing between all school sites. Importantly, the respondent noted that systemic change could be initiated since the main responsible authority would be in charge of scaling up,

expanding, and maintaining these operations. A similar strategy of model schools and networks focused on climate change and sustainable development could be used to promote environmental education and ESD within the education system.

One of the experts mentioned a critical opportunity to push the integration of ESD, environmental education and climate change education into the Thai national standards during the current educational reform. As another expert and one of the key informants from an intergovernmental agency remarked, educational policy goes through long adoption cycles. Alternatively, any changes that failed to be adopted during this period of educational reform would be difficult to mainstream within the system until the next reform period. The educational reform in Thailand represents a major structural opportunity to push forward ESD and CCE in the education system.

Furthermore, the national focal points for both the United Nations Framework Convention on Climate Change (UNFCCC) and Intergovernmental Panel on Climate Change (IPCC) are within the Office of Natural Resources and Environmental Policy and Planning (ONEP). The coordination of climate change policies with stakeholders outside of the MoNRE occurs via the Climate Change Management and Coordination Division (CCMC), formerly the Office of Climate Change Coordination (OCCC), and Climate Change Coordinators in ministerial and non-ministerial governmental agencies. In accordance with the Doha Work Programme on Article 6 of the UNFCCC, the DEQP was designated as the national focal point. Since the focal points for the UNFCCC, IPCC, and Article 6 of the UNFCCC are all within the MoNRE, there is little ownership for environmental and climate change issues within the MOE. The rigidity of the ministerial structure was described as a barrier to mainstreaming education on the environment and sustainable development, including ESD and CCE. Due to the institutional structure of ministries and the tendency to work in silos, the ability of government agencies to collaborate on multi-sectoral issues, such as climate change and sustainable development, results in incoherence in policy and practice. This lack of coordination represents a major structural barrier to coherent policy and programs supporting youth participation in responding to climate change issues.

An expert in climate change stated that the placement of these focal points within ONEP was ineffective since climate change requires expertise in many fields. This expert recommended that these issues be placed under a different authority in order to improve coordination and integration of climate change into national policies. A key informant from an intergovernmental agency expressed similar sentiments, although ineffective institutional organization for coordination on climate change and sustainable development is a common occurrence in the Asia-Pacific region. There is a need for capacity building on climate change and sustainable development among officials working in these areas, as well as a consideration of the institutional capacity of relevant agencies to fulfill mandated tasks.

At the international or regional level, a key informant from an intergovernmental agency and a key informant from an academic institution identified discussion about terminology related to ESD as a barrier to policy-making and program implementation. However, confusion over terminology does not appear to be as prevalent in the context of Thailand since practice emphasizes environmental education. These discussions may be a greater concern when practice transitions to approaches focused on ESD. In addition, the Philosophy of Sufficiency Economy does not seem to be strongly linked to ESD in Thailand, although as one of the experts remarked, this represents an opportunity for integrating sustainable development concepts with environment education and ESD.

Aside from educational policies, the effective implementation of national youth policies and plans is needed to strengthen institutional structures for youth participation. This requires capacity building for local and provincial governments to fulfill their roles and responsibilities towards children and youth. Several key informants and one expert on child rights mentioned the variable capacity of local and provincial governments in regards to child and youth councils at local, provincial and national levels. However, the existence of the 2007 Child and Youth Development Act was identified as a strength since there was an official, institutional structure and allocated budget for supporting youth development and participation. The Act and the children and youth councils represent an existing platform and structural opportunity that can be leveraged to

support youth participation in issues related to climate change and sustainable development.

Although there is an existing institutional structure for youth representatives to be involved in decision-making on national policies relevant to youth, the expert on child rights lamented that youth representatives are often unable to offer useful input. The reasons given by the expert are related to the failure to adequately prepare the youth representative to understand the issues being discussed and the formal setting of the discussions. The expert stated that youth are not like adults and cannot be expected to read official documents and understand policy-making processes as adults would. The expert suggested that youth representatives in policy-making discussions needed to be briefed in a manner that is appropriate for youth so that they can be prepared to provide thoughtful input to the discussions.

In order to increase the effectiveness of the children and youth councils, the expert on child rights suggested that capacity building was needed to promote youth participation. The expert indicated that a two-pronged approach for reducing structural barriers by building capacity of the adults, namely local and provincial officials, and youth involved in the children and youth councils. In this way, youth participation in children and youth councils at the local, provincial, and national levels can be leveraged to facilitate higher levels of youth participation through the existing structure mandated by the Child and Youth Development Act. By increasing the institutional capacity of the existing children and youth councils, youth participation would be systemically promoted throughout 878 amphurs and 77 provinces of Thailand.

Sufficiency Economy and Buddhism

In Thailand, the concept of sustainability is more widely known than the concept sustainable development, even though sustainable development has been integrated into national plans since 1992. The Thai monarch, His Majesty King Bhumibol Adulyadej, developed the Philosophy of Sufficiency Economy and provided three principles - moderation, prudence, and social immunity - as guidelines for living (Mongsawad, 2010). Sufficiency economy has been applied to agriculture in the form of guidelines to help poor, rural farmers improve quality of life and self-reliance. Moreover, the

concept of sufficiency economy has many applications at the individual, community, government, and national level.

Two of the key informants – one from a government agency and one from an intergovernmental agency – as well as one expert remarked that sufficiency economy was a national strength and potential entry point for Thailand to increase knowledge and understanding of sustainable development. Although sufficiency economy is often associated with rural and agricultural contexts, all three respondents felt that a shift towards understanding sufficiency economy in the context of modern life would be more appropriate. Indeed, the philosophy of sufficiency economy can be linked with the concepts of sustainable production and consumption by cultivating knowledge and values with the practice of the middle way, or moderation, to control overindulgence and greed (Bunnag, 2013). By focusing on moderation, reasonableness and self-reliance of individuals and communities, the application of sufficiency economy provides an alternative to the dominant paradigm of materialism and capitalism of modern society.

It is not the intent of this study to delve deeply into the relationship between sufficiency economy and sustainable development in theory or in practice. However, it is recognized that sufficiency economy is a response to sustainable development that plays a significant role in Thailand. Sufficiency economy is an integral part of the 9th, 10th, and 11th NESDPs and is important to the sustainable development discourse in Thailand. There are many aspects of sufficiency economy that build on foundations of Buddhism, the dominant religion in Thailand. Therefore, sufficiency economy represents an approach to sustainable development that is integrated into national policies and highly relevant to the Thai context that can be used to increase understanding about sustainable development.

The religious context of Thai communities also plays a role in promoting environmental protection and conservation. Buddhism is the dominant religion in Thailand and is practiced by 90% of the population (Central Intelligence Agency [CIA], 2013). A few respondents mentioned conservation efforts based on location traditions and religious beliefs that were important in local contexts. An expert in conservation stated that

temple monks were active in forest conservation as a part of their religious practice. He recounted local efforts to prevent deforestation by ordaining trees, thereby making the trees sacred and deterring people from cutting them down. A key informant from the media described the tendency of people who were practicing Buddhism to focus on self-development and were more likely to be interested have a balanced relationship with nature. While two key informants and two experts discussed the linkages between Buddhism and conservation, none of the youth respondents mentioned religion in the youth interviews. As a Thailand is a predominately Buddhist country, there needs to be consideration of the role of religious beliefs in social norms.

Both sufficiency economy and Buddhism are important to the context of sustainable development in Thailand as these cultural and religious concepts can be linked to the environment management and conservation. The study found that institutions and policies related to the Association of Southeast Asian Nations (ASEAN) were perceived by the key informants to be relevant since Thailand is a Southeast Asian country and member of ASEAN. The regional policies on sustainable development, environment, climate change, and youth were discussed in Chapter IV. The next section presents findings from the key informant interviews on regional initiatives that are pertinent to youth participation in climate change and sustainable development.

Regional Initiatives

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Seven key informants and three experts viewed the ASEAN Economic Community (AEC) and various regional initiatives as an impetus for Thailand to increase actions that increase collaborations at the regional level. This would be an opportunity to push the implementation of the ASEAN Environmental Education Action Plan (AEEAP). The AAEAP is an entry point for increasing environmental education and ESD in the identified target areas: formal, informal, and higher education. However, since the AEEAP is related to the environment, the national focal point is the DEQP under the MoNRE, not the MOE. The implementation of initiatives related to the AEEAP within the educational system would require an overarching framework and effective collaboration on environmental education between the MoNRE and MOE to reduce structural barriers.

Beyond the AEEAP, regional frameworks offer opportunities for increasing institutional capacity for responding to climate change. Two key informants from the non-profit sector, one key informant from an intergovernmental agency and two experts referred to regional initiatives, such as the Asia Pacific Coalition for School Safety (APCSS) and the ASEAN Safe Schools Initiative (ASSI). Although these initiatives are heavily focused on disaster risk reduction (DRR) or disaster risk management (DRM) in the education sector, several informants described ASSI as an important entry point for climate change education in schools in the highly vulnerable Southeast Asian region. This aligns with the suggestion by Anderson (2010) that climate change education needs to include cliamte change adaptation through DRR and preparation in schools and communities.

Furthermore, the Comprehensive School Safety Framework (CSSF) has three pillars as an integrated approach that considers the infrastructure and management in addition to the curriculum. In the context of increasing disasters due to climate change, these initiatives recognize children's right to survival and protection by preparing schools and school-aged children to respond to these disasters. The CSSF and regional initiatives, such as the APCSS and ASSI, builds institutional capacity on disaster management that seeks to reduce education sector losses.

Three key informants whose organizations are directly involved in these initiatives and two experts stated the importance of these initiatives at the regional level could serve as an impetus for Thailand to mainstream DRR and DRM into the formal education system. The reduction of losses from disasters in the education sector is key to ensuring that education provision can continue post-disaster.

Assessment of resilience in the education sector should comprise of physical conditions, human resources, institutional issues, external relationship as well as natural conditions to facilitate monitoring and evaluation (Tong, Shaw and Takeuchi, 2012). Bangay and Blum (2010) advocated for a concerted effort towards 'climate change proofing' educational infrastructure through better risk assessment and climate resilient design/maintenance. Climate resilient educational infrastructure can help to prevent loss of life in the disaster events and ensure educational provision for children and youth

post-disaster. Figure 5.1 provides an overview of educational responses to climate change proposed by Bangay and Blum. A comprehensive approach that addresses both the policy and school level for safer schools and enhancement of resilience capacity is vital to reducing structural barriers in implementing a coordinated response to climate change in the education sector.

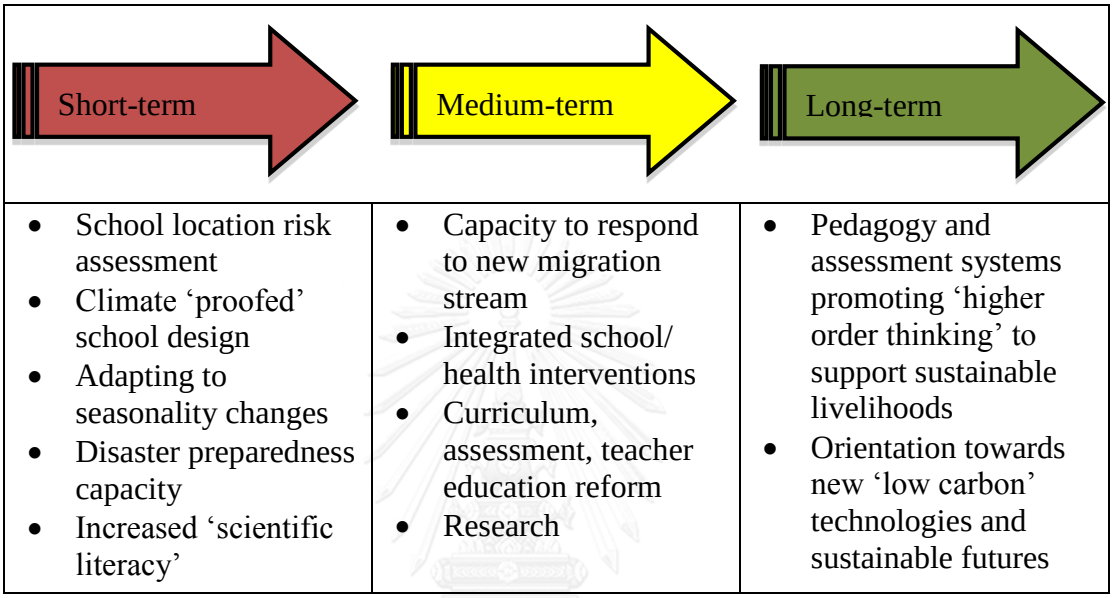

Figure 5.1 Educational responses to climate change.

Source: adapted from Bangay and Blum (2010)

The key advantage of the implementation of ASSI in comparison to AEEAP is the ability to mainstream these CSSF initiatives into the education system. While environmental education remains marginalized to the non-formal and informal sectors, there is potential for widespread action based on a top-down push for DRR and DRM in the formal sector, in accordance with the Sendai Framework. These frameworks could serve as a structural opportunity for preparing current and future generations to respond to disasters and climate change impacts while simultaneously reducing their vulnerabilities. Indeed, positive action on DRR and DRM in the education sector could help to realize a place-based understanding of climate change education as advocated by Pruneau et al. (2010) and Bangay and Blum (2010) since it responds directly to predicted disasters and climate change impacts on a specific location. Furthermore, efforts to increase youth participation through DRR and CCE can be instrumental in building skills and capabilities to address various harmful conditions. Thus, youth

would be empowered to act as change agents for sustainable development in their schools and communities.

Youth Development and Youth Leadership

Ten key informants who worked in organizations with programs and activities related to the environment used an environmental education approach. For four of these organizations, children and youth were the main target of their programs whereas seven of these organizations also worked with adults, such as teachers, community leaders, and policymakers. One of the key informants remarked that Thailand had a strong foundation in environmental education that is a useful foundation for approaching ESD. This approach has been termed environmental education for sustainable development, or EESD. Four key informants commented on the progress made in environmental education in Thailand over past twenty years. By using the existing experience and knowledge of environmental education practitioners, issues of climate change and sustainable development can be addressed using the environmental education and ESD approach to capitalize on Thailand's strength in this field.

Furthermore, the youth who have gone through various environmental education programs represent an asset as young adults in their communities. One of the experts interviewed identified the increased capacity of youth and their connection with their local community as outcomes resulting from environmental education activities in schools and with non-governmental organizations. Four key informants from organizations with long-term activities with youth, mentioned that some youth had changed their field of study and career paths as a result of their engagement in environmental education activities. A couple of the key informants themselves were youth who had been active in environmental education activities and started their own organizations to teach youth to be concerned about natural resources and conservation.

The existing capacity in environmental education practitioners and youth represents a bottom-up approach to effective youth participation that could support and strengthen policy and national responses. Eight key informants emphasized youth development as a way to increase youth capacity for participation as the overall objective of their programs. In a few of these organizations, the environment was not a major emphasis

of their programs unless the youth themselves chose the topic of the environment. These organizations tended to focus more on health and community development. Nevertheless, these organizations concurred that developing youth skills through a learning process that increased their ability to think, develop their own action plans and work collaboratively was key to youth development and capacity building.

The literature review on youth development and action competence supports the linkages between youth participation and the development of skills for action. Rajani's virtuous cycle clearly illustrates the positive relationship between youth development and youth participation. The main condition for this virtuous cycle to occur is that youth have the opportunity to build their skills and thus participate. As the have more skills and become more competent, youth would be able to participate more effectively. They would also be more likely to participate in other areas of society throughout their lives as they transferred their skills to other contexts, as described by Mokwena (2006) and Obradović and Maten (2007). Therefore, more opportunities for participation results in more capacity and higher levels of participation as depicted in Figure 5.2.

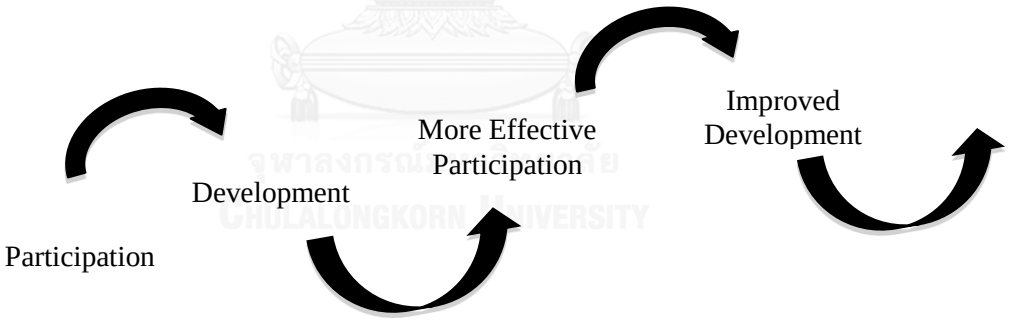

Figure 5.2 Virtuous sequence of adolescent participation and development.

Source: Rajani (2001)

Another viewpoint presented by two key informants and one expert was that youth leaders could act as role models and examples for younger children and youth. As mentioned previously, two of the key informants are examples of youth who engaged in youth action as university students and continued to be active in environmental activities. These youth leaders act as role models for younger children and youth to help dispel the notion that youth cannot take action and make a difference. They also help to demonstrate youth capacity to adults by acting as change agents in their communities,

as was mentioned by three key informants and two experts. In doing so, they depict positive examples of youth as change agents that can influence the views of youth held by adults. As adults recognize youth as resources, there is the potential to increase collaboration between youth and adults and expand opportunities for youth participation as proposed by Finn and Checkoway (1998).

Meaningful youth participation can be encouraged by 1) setting clear expectations that all youth can and should make a difference, and 2) providing visible pathways for youth to do so (Irby, Ferber, Pittman et al., 2001). Two key informants and an expert on youth concurred that youth need to see the paths that other youth have taken as role models. These respondents referred to activities in which older youth were involved in teaching or building the capacity of younger youth by sharing their experiences and insights. The youth respondents supported these ideas with examples of their engagement in peer-to-peer learning with children and youth through youth councils, environmental clubs, youth organizations, and social media. Moreover, the expert on youth regarded peer-to-peer learning as an appropriate and highly effective manner for youth to learn. The expert remarked that this type of learning could be coupled with youth networks and social media to facilitate exchange between peers.

Both of the key informants from the media noted that knowledge about environmental and climate change issues was not enough to change people's behaviors. This is supported by the knowledge-action gap described by Kollmuss and Agyeman (2002) as the failure of individuals to adopt pro-environmental behaviors even if they hold pro-environmental attitudes. The respondents suggested that knowledge had to be coupled with action in order for people to understand the importance of the problem. Thus, knowledge alone is not enough to result in a change or action, whereas coupling knowledge with action is more likely to have a stronger influence. This viewpoint aligns with perspectives from the ten key informants that emphasized experiential learning and practical action using an environmental education approach.

Furthermore, another key informant from the non-profit sector highlighted the affective aspects of environmental activities in which people have a feeling of accomplishment and that they are making a difference. This was emphasized as a fundamental part of

environmental education activities with children and youth in order to instill a sense of caring for the environment. In particular, one key informant recounted an instance were a youth participant brought her parents to see the tree that she had planted since she had dedicated the tree to her parents. This type of emotional connection revealed a sense of pride and accomplishment in her actions that lays the foundation for future actions. Therefore, the affective aspect behind environmental actions was a main part of the message that many organizations hoped youth would take away from their participation in environmental activities. These respondents discussed similar aspects of increasing motivation for people to be involved in environmental activities. Their responses are linked with the concept of efficacy and action competence since the action and the affective aspects would develop skills and motivations that would increase future action and participation.

In relation to globalization and youth culture, the use of social media and social networks inherently aligns with the preferences of youth. Since youth preferred to use social media in obtaining information on environmental issues, the expert on youth asserted that it would be a valuable opportunity to capitalize on this method of communication with youth. The expert described learning through social media as a highly mobile method of peer-to-peer learning that suits the learning style and interests of youth. Additionally, the expert considered it an alternative pathway for learning that does not rely on the education system. The use of social media for learning could would essentially bypass the formal education system altogether by connecting youth directly with other youth in an interactive manner.

Youth empowerment and mobilization has been identified as a key priority area for the Global Action Plan on ESD. Under Priority Action 4, youth are to be supported in their role as change agents for sustainable development through ESD, especially in non-formal and informal settings. Suggested actions for implementation include harnessing information and communication technologies for learning and networking (UNESCO, 2014). Indeed, one of the intergovernmental agencies explained that one of the strategies under discussion to increase youth involvement in ESD was to develop a platform for youth to promote this sharing. The discussions with key informants and experts, as well as the youth respondents, confirms the validity of these suggestions as

potential channels for informing and engaging youth on climate change and sustainable development issues.

5.2.5 Challenges for Implementation

The challenges described by the key informant and expert respondents were primarily related to implementation of youth participation in responding to climate change and sustainable development. The barriers ranged from policy issues to organizational and capacity issues. For the purposes of this study, the implementation challenges are discussed in relation to how they hinder youth participation in responding to climate change and sustainable development issues.

As discussed in the section on emergent themes, the lack of clear national policy on environmental education and ESD is a significant barrier for effective and integrated implementation in the education sector. The resulting structural barriers are linked to issues of mandate and jurisdiction that limited the authority of different governmental agencies. Additionally, three key informants from governmental agencies and many key informants from the non-profit sector admitted there were overlapping activities in the field. One respondent recounted how a school could be involved in multiple programs from different organizations due to the lack of coordination. Redundancy also resulted from the organizations utilizing similar approaches and activities. A key informant in the non-profit sector noted that there were many exemplar cases in the form of pilots and showcases, but there was a failure to mainstream these practices in the education system.

Twelve organizations listed donor funding and budget allocation as a barrier to implementation. Since the organizations in the non-profit sector are dependent on donor funding to operate their programs, donor funding was described as influencing the objectives, target groups, length, scale, and resources available for implementation. These activities were heavily dependent on project cycles and meant that programs ended with the project cycle; resulting in discontinuous implementation. Similarly, four governmental agencies indicated that their activities relied on budget allocation. One key informant from a governmental agency explained that expenditure on awareness-raising would often be questioned by the approval committee since there were other

agencies that had a stronger mandate for public campaigns and awareness-raising. Thus, these activities were frequently limited and remained a lower priority within the agency. This also reflects issues of institutional overlap that leads to confusion and incoherence in implementation.

For climate change and sustainable development issues, there is the added difficulty of having knowledgeable and skilled practitioners to work in these areas. Three key informants from governmental agencies highlighted lack of internal capacity as a barrier for implementing their programs and activities. In particular, one agency experienced high staff turnover and difficulty hiring staff with the appropriate knowledge and skills for the position. An expert interviewed also referred to the scientific expertise needed in climate change and other fields in order to have an integrated understanding of climate change impacts and responses. These capacity issues suggest the need for education and training in climate change and sustainable development for staff in government agencies.

Furthermore, three key informants from the non-profit sector and two from governmental agencies commented that their staff lacked skills for working with young people. The three key informants from the non-profit sector stated that staff with scientific backgrounds required additional training to develop skills for working with children and youth. Conversely, one of these key informants explained that one staff member was a former teacher who had good skills for working with children and youth, but did not have the proper background to understand environmental issue. Two key informants and one expert elaborated on the need to have expertise brought in, either through collaboration or as a consultant, to aid in the communication of scientific and technical aspects of climate change to children and youth.

Issues of capacity were also relevant at the community and local level. A number of the key informants worked at the provincial, district and community level. One respondent from an intergovernmental agency remarked that local government did not know about climate change and sustainable development issues. This posed problems when developing community and local government adaptation plans. There were also problems described by the expert on child rights and a key informant from a

government agency on the varying capacity of local officials to work with youth in the provincial and local child and youth councils. The varying capacity of the provincial and local government officials had a direct impact on the quality and quantity of youth activities at the local level. Both respondents stated the need for capacity building for local government officials working with children and youth. Increasing institutional capacity at the local level was reported as a focus area for several organizations from the non-profit sector with programs for disaster management and climate change adaptation. These responses suggest that capacity building for officials working with children and youth is necessary in the non-profit sector and local government agencies in order to support youth participation in climate change issues.

These challenges for implementation represent major obstacles for effective youth participation in responding to climate change. The primary challenge is related to the lack of a clear national policy in the education sector to facilitate implementation of programs in accordance with Article 6 of the UNFCCC. A secondary challenge is related to expertise and capacity issues for governmental agencies, non-profit sector, local government, and communities working in areas relevant to youth, climate change, and sustainable development.

5.3 Youth Interview Findings

The following section presents findings from the youth interviews conducted. The responses from the youth interviews are discussed according to the main sections of the interview guideline, namely 1) beliefs, worldviews, and perceptions, and 2) agency and participation. Youth responses were analyzed in relation to input from key informant and expert interviews to provide further interpretation.

5.3.1 Beliefs, Worldviews, and Perceptions

General and Environmental Concerns

The youth interviews began with general questions about the youth respondent's concerns for the present and future. These questions served to build rapport with the respondents before getting into the questions concentrating on the research themes. Regarding their general concerns, the youth respondents discussed issues varying from

social issues like poverty, education, crime, and politics to personal issues like academics and career. The youth expressed a myriad of concerns about the environment, especially deforestation, pollution, global warming, waste, and the use of natural resources. A couple of the youth respondents remarked that they felt people were not concerned about the environment and did not try to stop the environmental degradation that was occurring. One of the youth also mentioned that corruption and politics influenced environmental problems. The discussion about the youth respondents' concerns served to segue into discussing their understanding and perceptions about climate change and sustainable development.

Awareness and Understanding on Climate Change

All of the 14 youth respondents appeared to have a basic understanding of global warming and climate change with five youth respondents demonstrating advanced understanding of climate change. Nine youth described seasonal changes, warmer weather, and greenhouse gases associated with climate change. Three of the youth mentioned the destruction of the ozone layer, although they did not discuss its relationship to climate change. In addition, five youth respondents described climate change impacts on water and food security. Three of the youth respondents remarked that they had learned about climate change in their secondary school social studies and science classes. These respondents gave elaborate answers concerning the consequences of climate change, such as sea-level rise, melting ice, saltwater intrusion, natural disasters, disease, and migration. Although most youth appeared to have a general understanding of climate change, only one youth respondent discussed the scientific census and public debate on climate change.

Seven of the youth respondents discussed the use of fossil fuels, industry, and transportation as causes of climate change and linked these activities with releasing carbon emissions. Nine youth cited deforestation as a cause of climate change with a few of these youth also linked deforestation to flooding. Five of youth respondents mentioned air pollution, burning trash, and forest fires as causes of climate change. One youth described climate change as a result of the environment's impaired ability to repair itself due to degradation. Importantly, six of the youth respondents remarked that

climate change was caused by human activities and consumption. These responses signaled that youth were generally aware of the anthropogenic nature of climate change.

In terms of actions that could be taken to reduce climate change, the majority of the answers given by youth respondents concentrated on individual actions. Frequent responses included taking public transportation, biking, walking, planting trees, reducing plastic use, conserving energy, and separating waste in order to reduce carbon emissions. One of the youth did question the ability of planting trees to reduce climate change since the process was slow and might be too late to make a difference. The actions that most youth mentioned were behavior changes that were related to lifestyle choices.

Beyond individual action for reducing climate change, seven of the youth also identified education and awareness-raising through the media and campaigns as a way to help reduce climate change. One youth said that people needed to start caring about the environment. A few youth respondents remarked that these campaigns are often popular for a period of time and then discontinued. These youth felt that awareness-raising efforts needed to be frequent and continuous in order to be effective. Three youth respondents from a youth environmental group discussed the importance of using environmental education to develop the mindset in children to care for nature. However, only one youth respondent mentioned political regulations or taxation as a way to reduce climate change as most of the youth focused on behavior changes and educational initiatives.

Nine of the youth interviewed were not aware of activities that contributed to climate change that were related to food production and consumption. One youth respondent did mention sources of carbon emissions that are derived from methane production from cows, but did not discuss the implications of meat consumption. Two youth respondents described activities related to diet and food consumption that would reduce carbon emissions, namely vegetarianism and non-GMO food. This agreed with the findings from the study of Greek students by Malandrakis et al. (2011) that youth were less knowledgeable about indirect effects of climate change. Although the linkages

were not described in-depth, only three youth respondents demonstrated knowledge of the relationship between climate change and food production and consumption.

Although the majority of youth perceived climate change as a problem that people could help alleviate by reducing carbon emissions, one of the youth respondents presented the opposite extreme in believing that is was too late to prevent climate change. She reasoned that the latent effects of greenhouse gases in the atmosphere made global warming unavoidable. She held a rather pessimistic view of humanity's ability to deal with climate change due to the majority of people's lack of concern for the environment. Despite her pessimism, this did not result in lack of hope and failure to take action on climate change as suggested by Ojala (2012). In contrast, another youth respondent had a technocratic viewpoint that humanity would be able to develop scientific and technological advances to provide solutions for climate change and its impacts. It is interesting to note that she was very active in environmental activities in secondary school, so it appears that her technocratic viewpoint did not lead her to reject environmental action as beneficial.

While these two respondents represent two ends of the spectrum, it is important that youth have the available information to consider the possible climate change scenarios for themselves. However, adequate information is needed for youth to understand the causes, consequences, and relevance of climate change to their lives in order to make informed decisions about the appropriate responses to climate change to achieve the desired future scenario.

Views and Perceptions Regarding Climate Change and Sustainable Development

Regarding the perceptions that youth had about the effect climate change had on their current lives, many youth mentioned the hotter weather in Bangkok. A few of these youth stated that hotter weather could be linked to emotions, such as anger and frustration. A couple of youth also remarked that there could be mental and physical health impacts resulting from climate change. Beyond these impacts, five youth discussed macro-level impacts of climate change, such as seasonal changes, reduced agricultural productivity, and increased food prices. Two of the youth emphasized that storms and disasters due to climate change would increase in the coming decades. Three

of the youth respondents did not feel that climate change was important in their current lives, although one of these youth lamented that she should be more concerned about climate change. Overall, four youth respondents remarked that other factors in their daily lives were more important than climate change.

When asked how climate change would affect their lives in the future, five of the youth expressed uncertainty about how climate change would impact them in the future. Four youth respondents predicted that their lifestyles would alter to accommodate climate change, such as mode of clothing, transportation, and housing. Seven of the youth stated that there would be increased disasters and flooding in Bangkok that may result economic problems and loss of lives. Several youth expressed sentiments that their lives may be become more difficult due disasters or scarcity of resources, such as food and water, but were confident these impacts could be dealt with. A few youth did state that death was a possibility due to disasters, although these respondents were a minority. One of the youth commented that there would be not impact from climate change on her future life. These responses suggest that although many of the youth could describe the phenomena of climate change and were familiar with some of its impacts, there is a variable understanding of the long-term impacts of climate change and how it would affect their lives in the coming decades.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Brownlee et al. (2013) described a major problem with climate change that resulted from it being a problem with long-term implications, which is difficult for humans to understand. One of the youth respondents remarked on this phenomenon by saying that future generations would not know what the environment used to be like since the change is gradual. A 17-year-old female youth respondent expressed feelings that her peers did not think that climate change would impact them in their lifetimes. Indeed, a 17-year-old male youth respondent stated that climate change would not affect him in his lifetime, although he did notice that the seasons and cloud cover were changing. While youth may see some signs of climate change or seasonal variances, it appeared that many youth did not feel climate change impacts would drastically affect their lives.

The expert on climate change remarked that the scientific foundation that Thai youth have regarding climate change needed to improve since there appeared to be

misconceptions about the climate science, particularly about the linkages between global warming, chlorofluorocarbons, and the ozone hole. Moreover, the expert elaborated that these linkages are complex since chlorofluorocarbons are ozone-depleting substances and potent greenhouse gases thereby related to both ozone layer depletion and global warming. However, the youth responses provided in this study were not detailed enough to ascertain their understanding of these concepts.

The confusion between ozone layer depletion and global warming was noted in many studies which evaluated students understanding of climate science and climate change (Pruneau et al., 2010; Shepardson et al., 2009, 2010; Shepardson et al., 2012). The need to address common student misconceptions about climate change was supported by the literature, such as McNeill and Vaughn (2010) and Schreiner et al. (2005). To reduce these misconceptions, the expert on climate change suggested that CCE should be integrated into the national educational standards. Furthermore, the expert recommended that non-formal science education in the form of museums and learning centers should be promoted to support scientific literacy. Similarly, a key informant from a government agency remarked that science, technology, and mathematics education should be encouraged to strengthen science and technology literacy in order to improve understanding of climate change.

In relation to the impact of climate change on sustainability, six youth respondents remarked that the impacts were unclear and unpredictable. Two of these youth stated that there was going to be an impact, but they could not describe what that impact would be. When prompted further that these impacts could be at different scales, such as family, community, national, and international levels, the youth began to elaborate on their initial responses. Seven of the youth felt that climate change would change people's daily lives and lifestyles, especially if they were in an area that was heavily affected by climate change and made living more difficult. A few youth described human's ability to adapt and change to the situation. A couple of the youth discussed the impact of climate change on tourism, economy and agriculture sector at the national level as well as the local level. One of the youth respondents mentioned that the capital might need to be moved to a less vulnerable location to avoid climate change impacts.

Only one youth respondent stated that there would be no impact on sustainability due to climate change.

Nine of the youth did not demonstrate a good understanding of sustainability or sustainable development. In total, only three of the youth respondents discussed issues of sustainable development. Interestingly, two of the three respondents came from rural backgrounds from families working in the agricultural sector. One of the youth respondents from a rural, agricultural background referenced the King's Philosophy of Sufficiency Economy as a pathway towards sustainability. The other two youth respondents discussed the impacts of development in more general terms by describing the use and destruction of natural resources to meet human demands as the cause of increased development and urbanization. Five of the youth respondents discussed the concept of sustainable consumption associated with lifestyle changes and consumer choices. These responses suggest that some youth had an understanding of the linkages between sustainable consumption of resources and climate change. However, the majority of youth did not seem to have sufficient understanding about sustainable development and its linkages to climate change.

The transition to a low-carbon society would require significant changes to everyday lives of individuals. A few youth respondents indicated the need for improved infrastructure to facilitate this transition, namely alternative energy, public transportation, and safe biking infrastructure. Both individual practices and social norms also play a significant role in enabling this transition. Indeed, one of the youth respondents described how most people would follow the actions of another person, but they would be hesitant to be the first person to act. This youth suggested that the actions of a few people could a movement, similar to a small light in the darkness. As other people saw these actions and followed the example of others, there would be more and more lights as the movement spread. The responses given by youth appeared to support sustainable lifestyles and the necessary infrastructure to promote the adoption of these behaviors.

Sources of Information and Media about Climate Change

The sources of information and media about the environment and climate change that youth reported using the Internet, via websites and social media, books, TV and news, documentaries, and educational institutions. Four youth respondents mentioned youth camps and conservation activities as providing information about the environment. Since the majority of youth respondents indicated that their primary sources of information were from various media, these findings concur with Schreiner's assertion that media would be the main sources of information about climate change if a coordinated effort on climate change education in the education system was lacking.

The reliability of these sources was discussed in the youth interviews. Ten of the youth respondents considered books, TV and news, documentaries and educational institutions to have high reliability. For books, a few youth commented that reliability depended on the author, style of writing, references, and publisher. The reliability of Internet sources was considered more variable, requiring a comparison of several websites and sources. With all information sources on environmental and climate change, the youth felt that it was necessary to consider who wrote the information as well as who sponsored and published the information. For instance, sources written by scientists were considered to be more reliable since they are viewed as experts. Some non-profit organizations were viewed as more reliable sources of information since they did not have corporate stakeholders that may result in the dissemination of biased information.

Five of the youth stated that they received information about the environment and climate change from TV, either the news or documentaries. These sources were considered to be highly reliable in terms of the information provided. One youth mentioned the lack of TV shows related to the environment that concurs with the findings from the study on Thai youth and media on global warming by Chokriensukchai and Tamang (2010). Interestingly, while a few of the key informants mentioned the use of celebrities and teen idols to increase interest among youth, none of the youth respondents mentioned their preference of seeing celebrities promoting

environmental issues. This contradicts the recommendations made by Chokriensukchai and Tamang.

Eight youth respondents considered that the amount of information available about the environment and climate change to be adequate while four youth thought the information available was not adequate. In addition, a few youth expressed reservations about the ability of this information to change people's perceptions and motivate people to take action. When the youth were asked how they would like to receive information on environmental issues, such as climate change, many of them responded that they prefer sources that can be accessed via the Internet and social media. Six youth respondents felt that infographics and videos that clearly showed the impact of climate change and were easy to understand would be more accessible to youth. They suggested that short clips that could go viral in social media platforms could help spread awareness on climate change and how to take action. Only one of the youth respondents suggested education as a channel for receiving information on climate change. While most youth discussed information channels, one youth preferred to be a part of an environmental group or club and participate in events and conferences in a more social setting.

As to the content of the information available on the environment and climate change, one youth remarked that the information needed to clarify how a person's lifestyle choices impact the environment. Similarly, another youth stated that people needed to see how climate change would impact their daily lives and how they could take action on reducing or responding to climate change. This confirmed the suggestion by McNeill and Vaughn (2010) and that climate change education should focus on how to engage in action at an individual or community level. Since climate change was viewed as an abstract concept that is difficult to explain, the youth stressed the importance of making the information comprehensible and accessible to all people.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

5.3.2 Agency and Participation

Youth Political and Local Participation

In terms of political participation, the eight of the ten youth interviewed who were over the age of 18 were active in voting in local and national elections. Only two of the youth respondents in this age group stated that they did not engage in voting. For the remaining four youth who were under the age of 18, this question was not applicable. This corresponded with high rates of voter turnout in Thailand since 2001 due to the polarization of Thai politics mentioned in the *Thailand Human Development Report* (United Nations Development Programme [UNDP], 2014). Despite high political participation, the majority of youth were not members of civic organizations. However, a few of the university and working aged youth mentioned that they were active in business networking and professional organizations. This contrast suggests that while the majority of youth interviewed engaged in political participation, they refrained from membership in civic organizations.

All of the youth interviewed individually had participated in community service activities. The 14 youth respondents indicated that they joined these activities as part of secondary school or university activities, although some activities were independently organized with a group of friends. The community service activities ranged from more socially-oriented activities, such as English teaching, visiting orphanages, donating toys, homestays with hill tribe communities, cultural and art activities to more environmental ones, such as tree plantings, campaigning against plastic, research on biodiesel, outreach on environmental impact on development projects, and school camps. Five of the youth respondents mentioned participating in organizing campaigns and activities for children to learn more about the importance of the environment.

Six of the seven youth who were in the 22-24 year old age range had been active in volunteering activities since secondary school or university. One of these respondents explicitly discussed how volunteering in secondary school had influenced her decision to be involved in similar activities after graduating. Similar to the study by Youniss and Hart (2006), this shows that there are positive correlations between youth participation in secondary school and the tendency to participate as young adults.

However, although all of the youth had been involved in community service activities, not all of the activities were voluntary, as it may have been a requirement they need to fill for a course or graduation. One of the university students interviewed mentioned that the tree planting activity was a required part of her university course, while another university student said the campaign to reduce plastic was related to a communications course but the topic of the campaign was chosen by the students. Another respondent who was a working aged youth mentioned that her secondary school required 40 hours of community service per term as a graduation requirement. Thus, the motivations and reasons to engage in the community service activities are more complex than simply youth interest and choice.

Eleven of youth interviewed reported that they had not participated in any kind of activism, either in general or specifically related to climate change. One of the youth had participated in anti-corruption protests and another youth respondent had participated in protesting the construction of dams and a coal factory. Aside from these two youth, the three youth interviewed from the environmental group described their campaigns to educate visitors to national parks about wildlife. All of the youth who had engaged in activism were at least 21 years old, suggesting that youth who were in secondary school and university were less likely to engage in activism.

Considering the aspect of participation, all of the youth agreed that it was important for youth to express their ideas on issues that matter to them. The youth described processes and systems in their educational institutions for expressing their views, such as student government. At the family level, several youth mentioned that their parents are open to considering their views and what they have to say. A few of the youth remarked that youth may not be proactive in expressing their views. They lamented that youth may be more inclined to complain among themselves than to find appropriate channels to voice their concerns. One youth commented that every level of society should have mechanisms for including youth voice since currently these mechanisms are not clear or broadly available. Youth participation was mostly described in the context of family and school, although one youth mentioned participation in youth councils.

Regarding their involvement in decision-making, six of the youth respondents commented that they had limited influence in these processes. In student government, a few representatives may have more opportunity than the majority of students. A few of the youth respondents who were active in student government commented that they rarely received input from their fellow students. A few youth remarked that they might be able to start a dialogue with adults; even if the receptivity to their ideas may be limited. These perspectives from youth signify that most youth have limited ability to in decision-making processes and that youth participation is often based on input from selected youth representatives.

Youth Participation in Climate Change

Given that climate change is a global problem, five of the youth stated that it was everyone's responsibility to take action on climate change. One of the youth elaborated that individual action would not make a significant contribution unless there was collective action. Four of the youth respondents identified the business and industrial sectors as needing to take responsibility since they create pollution and emissions. Another four youth respondents said the government needed to take responsibility by setting and enforcing policies and regulations on reducing emissions.

In describing their own actions to reduce climate change, the youth gave examples of the types of activities they had participated in. Ten of the youth respondents reported participating in tree plantings activities. Nine youth described engaging in regular behaviors, such as gardening, conserving energy, biking, and reducing plastic use. Several of the youth respondents commented on the difficulty in following through with these actions, such as struggling to go plastic-free at school or the safety issues with biking in Bangkok. These responses aligned with the answers that the youth respondents had given when asked about the types of activities that helped to reduce climate change and suggests that youth are knowledgeable about and have participated in these activities.

In contrast, nine of the youth were not familiar with the types of activities that would prepare them to respond to climate change impacts. The majority of youth respondents did not answer this question or answered that they had not participated in these

activities. One youth remarked that she had only participated in fire drills as preparation for fire emergencies, but nothing to prepare for climate change. Two of the youth respondents mentioned that they had participated in ecosystem restoration activities, such as tree plantings, mangrove plantings, and coral reef restoration. These activities served to increase the protective function of ecosystems that act as a buffer against climate impacts. Overall, the youth respondents seemed unaware of activities that would help to prepare for or adapt to climate change impacts.

The youth respondents provided a variety of responses on how to better prepare young people to respond to climate change. One of the youth responded that youth might not be concerned about preparing for climate change impacts. The youth suggested evacuating Bangkok, restoring mangrove forests as protection from storm surges and coastal erosion, and engaging university students in tree plantings as ways to protect against climate change impacts. Due to the large scale of the problem, one youth remarked that it was the responsibility of the government and business sector to develop appropriate action plans for climate change. Two of the youth respondents commented that there needed to be more information about the impacts on Thailand, although one of these respondents noted that individuals should take responsibility for searching for this information themselves. One of the youth suggested that community learning centers be established for people to learn how to protect themselves against the impacts of climate change rather than reacting once they have occurred. However, approximately half of youth respondents did not provide a response when asked how to help them and their peers to be better prepared to respond to climate change. Overall, most of the youth respondents appeared to have limited knowledge about how to prepare for climate change impacts, aside from ecosystem restoration activities, and were not able to elaborate on how to better prepare young people to respond to climate change.

When asked if their actions to reduce climate change could make a difference, 13 of the youth gave positive responses. Three of the youth described their individual contribution as small, but felt that it could help slow down or reduce the severity of climate change impacts. However, one of the youth expressed doubt that one person's actions could make a difference since it represented a small percentage of the total

emissions generated. In contrast, another youth felt that one individual's actions might influence others to change their habits as well, thus creating more impact. Overall, the majority of youth respondents indicated that their individual actions were positive contributions to responding to climate change and reflects a degree of self-efficacy among youth.

The findings of the youth interviews confirmed the knowledge-action gap suggested by Kollmuss and Agyeman (2002). One of the main reasons given by youth as to why they and their peers had not adopted pro-environmental behaviors is that there are other issues in their daily lives that are more pressing or it is not convenient to perform the behaviors regularly. In particular, one of the youth respondents stated that her friends and family would occasionally become more aware and engage in more environmentally friendly immediately afterwards. These changes were not long lasting since they did not become habits and she noted that most people reverted to their former behavior. One of the key informants working in the media and an expert on youth agreed that there is a knowledge-action gap. These respondents made similar sentiments as the youth respondents that it requires effort and willpower to change people's habits and behaviors even when they are knowledgeable about the benefits or consequences of their actions.

Youth Perspective on Peers' Participation in Climate Change

Aside from their own participation in climate change action, the youth respondents were asked about the concerns their peers had about climate change as well as the level of information and preparation their peers had regarding climate change. Five youth acknowledged that their peers knew about climate change, but failed to take action. Seven of the youth respondents described their peers as not interested and not concerned about environmental issues such as climate change. A couple of the youth noted that most of their peers did not see climate change as significant in their daily lives. One youth remarked that although his peers may be concerned, they do not have time to take action since they have to study and work. In addition, four of the youth felt that their peers did not adequate information about how to take action in responding to climate change. Whether their peers were concerned or unconcerned about climate change, the

youth described the knowledge-action gap in relation to their peers since most did not take action in responding to climate change.

Climate change was seen as a broad problem that most of the youth respondents' peers did not fully understand the consequences of and it was difficult for individuals to recognize the impacts on their lives. Two of the youth described the information on climate change as sufficient to be familiar with the basic phenomena, but insufficient to help their peers understand the causes and consequences on climate change. A few of the youth respondents remarked that their peers are more familiar with the concept of global warming than with climate change. Moreover, a couple of the youth who considered that the amount of information available about climate change was sufficient did qualify the statement by saying that many of their peers may not be interested or motivated to learn about climate change. These findings suggest that more awareness about the consequences of climate change is necessary to make these issues more relevant to youth.

Nine of the youth respondents did not feel that there was adequate information on how to prepare for climate change. Generally, they did not feel that their peers were adequately prepared to respond to climate change. One youth elaborated that her peers did not think it was their problem and that climate change would not happen in their lifetime. Seven youth respondents gave proactive responses that stated the need for more education and information about what to do to prepare for climate change and to survive in the case of disasters. Beyond this knowledge, there is also the need for practice of these skills on a regular basis, like fire and tsunami evacuation drills. The lack of information on how to prepare for and respond to climate change reported by youth respondents is a significant gap in climate change knowledge and skills that are needed for youth participation.

In order to increase their peer's knowledge of climate change, five of the youth respondents stated that the issue needed to be covered in the media. The media channels that the youth considered to be the most effective at reaching youth were social media and videos. The youth respondents stated that the material provided needs to capture their attention and motivate them to take action. In particular, one youth mentioned the

need for this information to be provided continuously and repeatedly since education and awareness-raising could occur at the family, community and institutional levels. One of the youth respondents considered the need for policy support as well as government or corporate incentives for people to take action, such as awards or tax incentives. The suggested communication channels, media and education at all levels, are both strategies that are part of the Doha Work Programme on Article 6 of the UNFCCC for developing knowledge about climate change in youth.

Eleven youth respondents were not able to articulate a response when asked how young people should be prepared to help respond to climate change. Similar to the question regarding their participation in activities to respond to climate change, the majority of the youth were unfamiliar with possible actions and responses. However, for the three youth respondents who gave a response, all three of them focused on education and awareness-raising campaigns on the impact climate change will have on their lives in order to build real concern among youth. One of the youth also expressed the need to understand the way climate change will affect various sectors as it could be related to their careers. The limited responses given by the youth interviewed suggests that there is insufficient information and understanding on how to prepare for climate change.

Youth Agency

Youth were asked if they felt that adults listened and acted on the comments and concerns of youth. Six youth reported that adults did not listen to their concerns or that it depended on the context of the situation. In general, the adults listened but did not necessarily act upon the suggestions made by youth. Three youth respondents commented that if there was good reason to support the comment or if the follow-up action was possible, then adults may act upon the suggestions made by youth. A couple of the youth respondents gave positive accounts of adults listening to their concerns and taking collaborative action with them on these concerns. Overall, there was a general sentiment among the youth respondents that adults failed to follow-through on suggestions made by youth.

Regarding youth agency, four of the youth respondents stated that adults hindered youth involvement. These youth respondents noted that adults tend not to approve proposals

or take action on suggestions made by youth. Three youth respondents remarked that it is rare that youth can create change because adults do not listen to them. Despite this, two of the youth respondents described situations where student protests against school rules resulted in a change in the rules. These negative perceptions of adults as hindering youth involvement can also limit the ability of youth to take action or create change.

The study found that youth described the responses of adults to youth suggestions as being highly dependent on the context and reputation of the youth involved. One of the experts related an example of students at a prestigious school with a very conservative school board where the school board listened and approved an initiative presented by high achieving students. The expert suggested that the caliber of the students who made the proposal played a role in the school board's decision to accept the initiative. This concurs with Checkoway's analysis that youth who are knowledgeable and confident are more likely to be involved. In other cases, the youth respondents stated that it depended on how many people supported the initiative. If there were many people who showed their support of the initiative, the adults or authorities were more likely to listen to a large group compared to a small group.

These responses align with the literature on adults as the primary barriers to youth participation as asserted by Mokwena (2006), Checkoway (2011), and others. Many of the youth respondents gave their perspectives of adults as hindering youth participation because they did not believe that youth were capable, which was cited by Checkoway (2011). Although adults listened to youth concerns, the resultant action based on youth views and suggestions seems to be limited. Seven of the youth felt that adults generally hindered youth involvement with two exceptions where youth reported being supported by adults. A couple of the key informants and one of the experts interviewed discussed the impact of adult expectations on youth participation. Since adults have a certain viewpoint of children and youth and what they are capable of, children and youth are often limited in their ability to participate to competitions or short speeches at events designed for adults. These viewpoints are influenced by socio-cultural norms of how adults expect children to act.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

In contrast, the youth respondents who had positive experiences with adults seemed to view adults as providing guidance and assistance. Two of the youth respondents who were active in student government and local youth councils reported adults to be supportive of youth activities. One of these respondents commented that his teachers were instrumental in teaching him the skills need to participate in the youth council. Other youth respondents noted that the students in the student government were tasked with many activities that involved youth decision-making, although the decisions were considered trivial, such as themes of events and organizing activities. A 22-year-old youth respondent indicated that she had positive interactions with adults, such as her professors and teachers. Although the youth respondents tended to view adults as a hindrance to youth involvement, those youth that had positive interactions with adults tended to view adults as supportive of youth participation.

In relation to youth voicing their concerns and collaborating with adults, a few of the youth discussed communication issues between the generations. One youth described it as a barrier between the generations and echoed similar views expressed by a key informant from a government agency. For younger adults, the youth suggested that it might be possible to communicate in a less formal manner. Two of the youth respondents commented that it was more effective to communicate with older adults in a more formal manner, such as in writing or through a specified process. The communication barrier between youth and adults does not appear to be unusual due to the generational gap and poses a major obstacle for youth participation.

Communication between youth and adults can be increased through sensitization for adults on how to talk so youth can listen and how to listen to what youth say. The need to sensitize adults is an essential strategy to promoting effective youth participation that was emphasized by the expert on child rights. Similarly, youth can be taught communication strategies that can be utilized in different situations when discussing issues with adults. Capacity building for youth and adults can help to open communication channels and lay the foundation for improved youth participation.

The sample of youth respondents interviewed had a relatively large proportion of youth who had studied in international school settings in Thailand or abroad. Five youth. The

remarks made by the youth in discussing youth agency in their educational institutions summarized that teachers in Thai schools were less likely to be concerned about the environment and were less supportive of activities related to the environment. Three youth respondents commented on differences between international and Thai schools, particularly in terms of teaching style and teachers' concerns about the environment, which was often a barrier to engaging in environmental activities in Thai schools. These responses given by these five youth respondents concurred with comments from key informants that international schools were more receptive to environmental education and integrated learning activities, whereas many Thai schools viewed these activities as supplementary.

Youth were not the only respondents who noted cultural differences in international and Thai settings as some key informants made similar remarks. One of the key informants who worked in a multicultural, international setting stated similarly that Thai staff were less likely to put themselves forward and offer suggestions. Another key informant stated that youth that are involved in formal committees rarely speak and give strong input. This key informant also emphasized the conservative nature of adults towards youth rights in Asian cultures, which often hinders genuine youth participation. This suggests that there are cultural differences that may act as barriers to youth participation that are relevant for Asian cultures.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

While the key informant and youth respondents did not go into these cultural differences in-depth, there are strong implications for youth participation based on the socio-cultural norms and traditions of Thai culture. First, the youth may be hesitant to voice their concerns and views to adults. Second, the adults generally have a conservative viewpoint of youth and their responsibilities. According to the literature on youth participation, adults represent a major barrier to youth participation because they are not ready to share power and responsibilities with young people (Hart, 1992; Mokwena, 2006; Rajani, 2001). The remarks made by youth respondents, key informants and experts in this study suggests that traditional Asian culture that emphasizes respect of elders and authority might pose an additional obstacle for higher levels of youth participation.

The findings from the youth interviews suggest that for youth to become effective change agents in responding to climate change, there must be pathways that allow them to translate their knowledge into action. The multi-dimensional nature of the process is reflected in the knowledge-action gap since knowledge does not guarantee the desired action. Many youth respondents lamented that increasing awareness on climate change was not enough to initiate behavior change and continuous action for themselves and their peers. Promoting youth participation in responding to climate change issues should understanding the individual level barriers to youth action and develop pathways that minimize these barriers. At the same time, opportunities to empower youth participation and further youth development according to the virtuous cycle should be encouraged as pathways for youth participation are broadened.

5.4 Model for Youth Participation in Responding to Climate Change

This section presents a model for youth participation in responding to climate change in the context of sustainable development will be presented based on the main findings of the policy and practices in Thailand.

The SWOT diagram depicts the strengths, weaknesses, opportunities, and threats found in this study shown in Table 5.3. The strengths and opportunities represent entry points for increasing youth participation in responding to climate change. Conversely, the weaknesses and threats represent obstacles to this process. The SWOT diagram provides a succinct overview of the major findings from the desk review and stakeholder interviews.

Table 5.3 SWOT Diagram for Youth Participation in Responding to Climate Change in Thailand

Strengths	**Weaknesses**
• Environmental Education foundation, especially in non-formal and informal sector • Sufficiency Economy • Religious beliefs related to conservation • Child and Youth Development Act • Children and youth Councils • Non-profit sector programs related to child's rights, adaptation, DRR, and citizen science • Youth to act as role models and change agents • Local tradition and knowledge on conservation • Autonomous adaptation by local communities and farmers	• Climate policy and implementation more focused on mitigation than adaptation • Policymakers have limited knowledge on climate change • Lack of country-specific data on climate change impacts • Lack of adequate budget/funding • Lack of framework for ESD • Overlap and redundancy in environmental education activities • Lack of coordination • Limited climate change in education standards • Failure to mainstream environmental education and ESD in formal sector • Variable capacity at local level • Staff turnover • Knowledge-action gap • Adult perceptions of youth
Opportunities	**Threats**
• ASEAN Environmental Action Plan • DRR in education sector • Eco-school Networks • Educational reform • Use of Internet and social media	• Political instability • Economic instability • Hazard exposure • Vulnerability to climate change • Climate risk

The conceptual themes identified in this study were two-fold: the need for an enabling environment for youth participation and individual-level factors for empowered youth participation. The conceptual themes, major categories and minor categories were derived from qualitative analysis and informed by the desk review (see Table 5.4).

Table 5.4 Themes and Categories Regarding Youth Participation in Responding to Climate Change

Themes	Major Categories	Minor Categories
Enabling Environment	Structural Opportunities	International Policy Regional Initiatives National Policy
	Structural Barriers	Implementation Communication
	Education, Training, and Media	Foundations and Strengths Delivery and Content
Empowered Youth Participation	Knowledge, Skills, and Beliefs	Climate Change Causes Climate Change Impacts, Vulnerability, Risks, and Adaptation Climate Change Action Information Sources and Reliability
	Attitudes and Perceptions	Individual Perceptions of Climate Change and Sustainable Development Perceptions of Peers towards Climate Change Perceptions of Adults towards Youth
	Participation and Agency	Civic Engagement Perceptions of Participation Perceptions of Youth Agency

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

A proposed conceptual model for youth participation in responding to climate change in the context of sustainable development is shown in Figure 5.3. The model aims to support the development of an enabling environment for youth participation through supportive policy, leveraging structural opportunities, minimizing structural barriers, and promoting education, training, and media.

Based on this model, recommended inputs and processes are offered for developing coherent national policy and enhancing opportunities for youth participation. Coherent national policy would be encouraged through climate change mainstreaming and youth mainstreaming in international, regional, and national policies and plans that support youth participation in climate change and sustainable development. Opportunities for youth participation would be enhanced by leveraging structural opportunities, such as the existing structure and fiscal budget of child and youth councils, initiatives related to disaster risk reduction in the education sector, and educational reform to integrate education on climate change and disaster risk reduction in national education standards. Structural barriers related to implementation and communication that hindered effective execution of policies and plans would be minimized by having an overarching framework and designated authority on education for sustainable development and Article 6 of the UNFCCC, and partnership between public, private, and non-profit sectors along with fiscal budget allocation and funding. These actions would support effective implementation of national policies and plans.

Within this enabling environment, the primary methods for improving institutional and individual capacity for youth participation were education, training, and media. At the institutional level, capacity building through education, training, and media would improve the ability of teachers, officials from government agencies and non-profit sector, and media practitioners to contribute positively to the enabling environment. At the individual level, youth participation appeared to be influenced by individual level factors, namely 1) knowledge, skills, and beliefs, 2) attitudes and perceptions, and 3) participation and agency. The promotion of education, training, and media would serve to build capacity at national and local levels for youth participation.

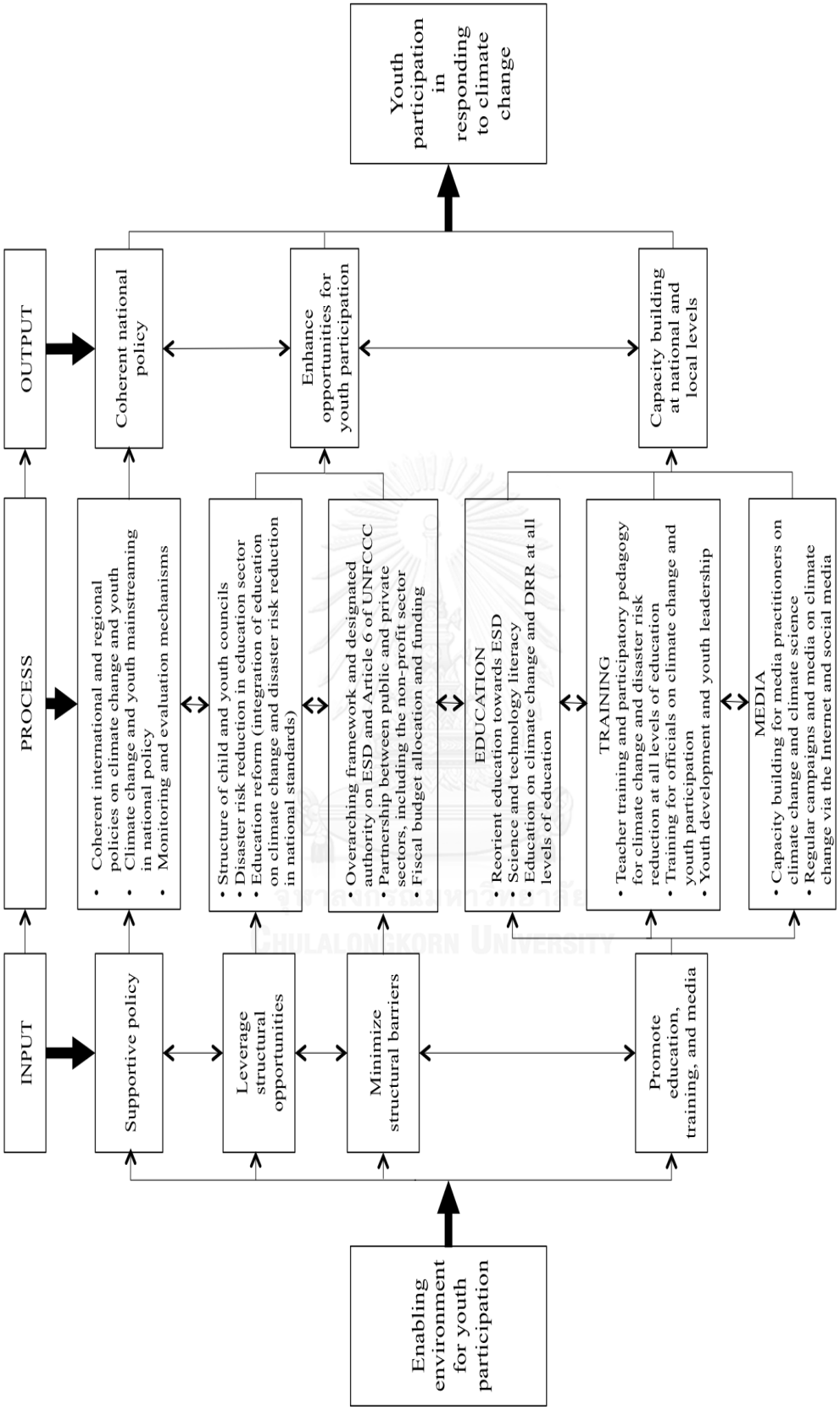

Figure 5.3 Model for youth participation in responding to climate change in the context of sustainable development.

The major avenue for capacity building is through education, training, and media. The approaches used for delivery and the content provided through these channels influences the response and impact on the individual level factors mentioned previously. Education and training targeting youth included, science and technology literacy, various aspects education for sustainable development at all levels of education (e.g. environmental education, climate change education, and disaster risk reduction), practical action, volunteerism, and youth development and youth leadership. The reorientation of education towards education for sustainable development requires teacher training and participatory pedagogy for climate change and disaster risk reduction in order to be effective.

In terms of the media, capacity building for media practitioners on climate change and climate science would increase the effectiveness and accuracy of the information disseminated via the media. The use of technology could be used to regularly communicate with youth through the Internet, social media, and mobile platforms. Existing and new youth networks could be created to promoted exchange of information and interaction among youth at local and global levels. For education, training, and media, the approaches suggested by the research findings are depicted in Table 5.5.

Table 5.5 Suggested Approaches for Education, Training, and Media

Education and Training	**Media**

• Science and technology literacy
• Education for sustainable development
  – Environmental education
  – Climate change education
  – Disaster risk reduction
• Practical action
• Volunteerism
• Youth development and youth leadership
	• Internet
	• Social media
	• Infographics
	• Videos

Empowered youth participation appeared to be the result of education and awareness-raising on climate change coupled with opportunities for participation. The content to be included in education, training, and media have been proposed by many authors (see Section 2.5.2), but are discussed here in relation to individual level factors that influence youth participation in climate change and sustainable development within the enabling environment. While youth are considered a target group for education, training, and media to build awareness and participation in climate change issues, it is important to remember that youth is a heterogeneous group. Each individual youth will respond to education, training, and media differently due to his/her individual background. The knowledge, skills, and beliefs required for youth to participate in responding to climate change include, but are not limited to:

1. Knowledge about climate change, its causes and impacts, benefits and consequences of their actions, sustainability, information sources, and participation processes;
2. Skills for critical thinking, problem solving, communication, and participation;
3. Belief that their actions can make a difference and their input is valuable.

Importantly, knowledge, skills, and beliefs developed on non-climate change related topics could aid in the development of these knowledge, skills, and beliefs for climate change. Essentially, the development of knowledge, skills, and beliefs could be transferred from general environmental or youth development activities.

The perceptions of social norms include religious traditions, local customs, social expectations, beliefs about others in society, and other social-cultural elements. These perceptions can be linked to their perception of action or inaction on climate change issues by their peers and adults. In regard to participation, it can be related to the expectations that they feel adults have of youth and their perception of adult's willingness to listen to and involve youth in participatory processes.

Both of these aspects, knowledge, skills, and beliefs and perceptions of social norms, subsequently influence the youth's attitudes and perceptions towards climate change and sustainable development. The attitudes and preferences held by youth regarding

participation in climate change influences their concerns about the present and the future, feelings of responsibility, consideration of future conditions, and sense of agency. These attitudes and preferences determine the likelihood that the youth will have the intent to act or to ultimately take action.

Since the intent to act does not necessarily mean that the individual will take action, there is the possibility that the process ends at intent to act, as described in the knowledge-action gap. However, if the individual follows through with the action, this is the beginning of the virtuous cycle of empowered participation. In an enabling environment, the individual would have further opportunities to gain knowledge and skills, and take practical action that would increase the likelihood that youth would decide to act rather than to relapse into inaction. The reiterative nature of youth participation and its connection to youth development, as described by Rajani, means that these interactions provide opportunities for youth to enhance skills and leadership qualities that can be transferred to other areas of life.

The proposed model provides a conceptual model for devising an enabling environment for youth participation in climate change issues through policy and practice. The model can be adapted to particular contexts and used at international, regional, national, and local levels. It considers the development of an enabling environment that is conducive for youth participation through supportive policy, leveraging structural opportunities, and minimizing structural barriers. These supportive policies and structures, including necessary fiscal budget allocation and political will, would facilitate the delivery of education, training, and media with appropriate content for empowering youth participation in climate change and sustainable development. This content should not be prescriptive, but rather enable youth to think critically and formulate appropriate responses to achieve more sustainable pathways for development. In this manner, youth can be prepared for climate change and empowered to be long-term contributors and agents for societal change and sustainable development.

CHAPTER VI
CONCLUSIONS AND RECOMMENDATIONS

This chapter provides a summary of the study and key findings regarding policy and practice. Then the chapter discusses recommendations for policy and practice derived from the research findings. The chapter concludes by offering implications of the study and suggesting possible directions for future research.

6.1 Summary of the Study

The goal of this study was to examine national policies and plans related to youth and climate change in the context of sustainable development and identify significant conditions and possibilities for a youth participation model in responding to climate change. Data collection comprised of a desk review of relevant academic literature and international, regional, and national policy as well as stakeholder interviews with key informants, youth, and experts. The interview protocols were designed around themes on youth participation suggested by the literature review, namely awareness, understanding, perception, agency, motivation, efficacy, engagement, and power sharing. The key informant interview protocol consisted of questions related to 1) primary programs of the organization and activities related to climate change, 2) youth policies and views on youth, and 3) youth engagement and participation strategies, both in general and specifically relate to climate change. The youth interview protocol had questions related to 1) beliefs, worldviews and perceptions regarding climate change and sustainable development, and 2) agency and participation. The interview guides were piloted and modifications were made accordingly. Additional interviews with five experts in relevant fields were used to discuss and analyze initial findings and observations from the key informant and youth interviews.

The findings from the key informant interviews provided an overview of the different approaches and activities using by organizations in engaging youth in environmental and developmental issues, and offered areas for consideration when evaluating the challenges and opportunities for youth participation in responding to climate change. The youth respondents also contributed their perspectives on various elements of youth

participation in climate change issues for themselves and their peers. The expert interviews offered additional insight to the responses given by key informants and youth. Finally, the results from the desk review and stakeholder interview data were considered in the development of a model for youth participation in responding to climate change in the context of sustainable development in Thailand.

6.2 Recommendations

Regarding the proposed model, recommended actions to improve youth participation in responding to climate change in the context of sustainable development at local, sub-national, national, regional, and international levels include:

1. Coherent national policy through climate change mainstreaming and youth mainstreaming in relevant policies;
2. Enhancing opportunities for youth participation by expanding channels and opportunities for youth participation regarding issues of climate change and sustainable development, particularly decision-making processes, with appropriate fiscal budget allocation and funding.
3. Promoting education, training, and media
    - Developing effective delivery channels and content for climate change education that is appropriate to national and local circumstances at all levels of education (e.g. science, technology and mathematics education, environmental education, education for sustainable development, disaster risk reduction, campaigns, and media);
    - Sensitizing and building capacity for teachers, relevant officials, and media practitioners on climate change, climate science, and strategies for engaging youth in participatory processes;
    - Creating opportunities for developing youth leadership and youth change agents concerning climate change and sustainable development issues;

6.3 Implications of the study

This study offers suggestive evidence for the necessity of clear national policy and coordinated efforts on youth participation in climate change issues in Thailand, in

accordance with *Agenda* 21, the Johannesburg Plan of Implementation, *The Future We Want*, and Decision 15/CP.18 on Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC). This study is an initial exploration of these issues that informs policymakers and practitioners about the conditions for youth participation in responding to climate change in the context of sustainable development in Thailand. In accordance with international agreements on climate change and sustainable development initial actions to promote youth participation exist in regional and national policy, although this study found gaps in policy and practice. The proposed model provides recommended actions for encouraging authentic youth engagement and participation in responding to climate change and achieving sustainable development. The findings from this study and proposed model offers a foundation for considering these issues in different contexts and scales.

6.4 Further Research

Studies on youth participation in climate change in the context of sustainable development in Southeast Asia are limited. This research seeks to narrow this gap. The current study is focused on policy and practice related to youth participation in climate change issues in Thailand and offers a starting point for investigations into other contexts, whether they are conducted at the regional or local level.

6.4.1 Baseline Data on Youth and Climate Change

In the literature review, many studies on student's beliefs about action and willingness to act have been conducted (see Boyes and Stainstreet, 2012). Further research on the knowledge, attitudes, and behavior of youth would help to provide a baseline of public awareness, attitudes and action on climate change in Thailand, as recommended in the Doha Work Programme on Article 6 of the UNFCCC. Knowledge-attitude-practices surveys can be adapted to local contexts and widely distributed to investigate human behavior related to climate change. Targets for the knowledge-attitude-practices surveys could include students, teachers, administrators, and parents. These surveys can establish baselines for evaluating the effectiveness of public campaigns, awareness-raising activities, and educational curricula. This understanding can be applied to the development of new strategies and interventions.

Additionally, baseline data on aspects of youth political environmental efficacy, as described by Levy and Zint (2012) could be researched. A greater understanding of the variables involved in external and internal environmental efficacy would provide greater insight to youth understanding of environmental politics, their competency in engaging in environmental political acts, and belief that they can influence environmental decisions and actions. This research could explore factors influencing youth political environmental action in climate change and sustainable development.

Both the research on knowledge, attitudes, and behavior research and political environmental efficacy would be quantitative in nature. Data and findings from these youth surveys would provide quantitative measures from large samples of youth that would be more reflective of the youth demographic.

6.4.2 Country-specific Data on Climate Change Impact

Further research should be conducted to examine the impact of climate change on youth within the context of the national and local circumstances. For Southeast Asia, the Working Group II Contribution to the 5th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) acknowledged there are many research areas that lack sufficient research data on climate change impacts on physical and social systems (Hijoka et al., 2014). Therefore, country-specific data on climate change impacts at higher resolution is needed to describe localized impacts.

Many climate change-related policies at national and local levels have not adequately considered the implications of climate change of children, youth, and future generations. In order to address intergenerational equity inherent to sustainable development, authentic youth participation in responding to climate change is an important component of building more sustainable societies for the future. This study explored policy and practice related to youth participation in climate change in Thailand and serves as a basis for increasing understanding of these processes in Southeast Asia.

REFERENCES

(1992). The Enhancement and Conservation of the National Environmental Quality Act B.E. 2535 Bangkok: Ministry of Science, Technology and Environment.

(2007). Royal Decree on the Establishment of Thailand Greenhouse Gas Management Organization (Public Organization) B.E. 2550 (2007). Bangkok.

Abelson, J., Forest, P.-G., Eyles, J., Smith, P., Martin, E. and Gauvin, F.-P. (2003). Deliberations about deliberative methods: issues in the design and evaluation of public participation processes. Social Science and Medicine, 57 239-251.

Acharya, R., Singh, A., Santhya, K. G., Ram, F., Jejeebhoy, S., Ram, U. and Mohanty, S. (2010). Participation in civil society and political life among young people in Maharashtra: Findings from the youth in India - situation and needs study. Journal of Adolescence, 33 (4): 553-561.

Anderson, A. (2010). Combating climate change through quality education. Washington: Brookings Institution.

Antionio, E., Ofei-Manu, P. and Olsen, S. H. (2014). Achieving Sustainable Development Goals (SDGs) through transformative governance practices and vertical collaboration at the national and subnational levels in Asia Pacific. Available: www.sd-network.eu [Accessed April 5 2014].

Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35 (4): 216-224.

ASEAN Agreement on Disaster Management and Emergency Response [AADMER] Partnership Group. (2013). ASEAN Safe Schools Initiative Phase 1 Report.

ASEAN Agreement on Disaster Management and Emergency Response [AADMER] Partnership Group. (n.d.). ASEAN Safe Schools Initiative [Online]. Available: http://www.aadmerpartnership.org [Accessed August 6 2015].

Association of Southeast Asia Nations [ASEAN]. (2012). ASEAN Action Plan on Joint Response to Climate Change. Association of Southeast Asia Nations

Association of Southeast Asia Nations [ASEAN]. (2013). ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme for 2010-2015. Jakarta: ASEAN Secretariat.

Association of Southeast Asia Nations [ASEAN]. (2014a). The ASEAN Charter. Jakarta: ASEAN Secretariat.

Association of Southeast Asia Nations [ASEAN]. (2014b). ASEAN Environmental Action Plan (2014-2018). Jakarta: ASEAN Secretariat.

Association of Southeast Asia Nations [ASEAN]. (2014c). ASEAN Joint Statement on Climate Change 2014. Association of Southeast Asia Nations

Association of Southeast Asia Nations [ASEAN]. (2014d). Roadmap for an ASEAN Community 2009-2015. Jakarta: ASEAN Secretariat.

Association of Southeast Asia Nations [ASEAN]. (n.d.). Overview on ASEAN Ministerial Meeting on Youth (AMMY) [Online]. Available: www.asean.org [Accessed August 11 2015].

Babbie, E. (2010). The practice of social research. Belmont: Wadsworth.

Bangay, C. and Blum, N. (2010). Education responses to climate change and quality: Two parts of the same agenda? International Journal of Educational Development, 30 (4): 359-368.

Bass, S., Dalal-Clayton, B. and Pretty, J. (1995). Participation in strategies for sustainable development. London: International Institute for Environment and Development (IIED).

Beg, N., Morlot, J. C., Davidson, O., Afrane-Okesse, Y., Tyani, L., Denton, F., Sokona, Y., Thomas, J. P., La Rovere, E. L., Parikh, J. K., Parikh, K. and Rahman, A. A. (2002). Linkages between climate change and sustainable development. Climate Policy, 2 (2): 129-144.

Beierle, T. C. (1999). Using social goals to evaluate public participation in environmental decisions. Policy Studies Review, 16 (3/4): 75-103.

Berkowitz, A. R., Ford, M. E. and Brewer, C. A. (2005). A framework for integrating ecological literacy, civics literacy, and environmental citizenship in environmental education. *In:* Johnson, E. A. and Mappin, M. J. (eds.) Environmental Education and Advocacy. Cambridge: Cambridge University Press.

Bhatnagar, B. and Williams, A. C. (eds.). (1992). Participatory development and the World Bank: Potential directions for Change. Washington: World Bank.

Bizikova, L., Robinson, J. and Cohen, S. (2007). Linking climate change and sustainable development at the local level. Climate Policy, 7 (4): 271-277.

Boyes, E. and Stanisstreet, M. (2012). Environmental education for behavior change: Which actions should be targeted? International Journal of Science Education, 34 (10): 1591-1614.

Brownlee, M. T. J., Powell, R. B. and Hallo, J. C. (2013). A review of the foundational processes that influence beliefs in climate change: opportunities for environmental education research. Environmental Education Research, 19 (1): 1-20.

Bunnag, A. (2013). Sustainable development in Thailand. International Journal of Social Science and Humanity, 3 (1): 39-42.

Central Intelligence Agency [CIA]. (2013). The World Factbook 2013-2014. Washington, DC: Central Intelligence Agency.

Charnley, F., Fleming, P., Dowsett, T., Fleming, M., Cook, M. and Mill, G. (2010). Engaging schools in the science of low-energy buildings. Public Understanding of Science, 21 (7): 875-890.

Checkoway, B. (2011). What is youth participation? Children and Youth Services Review, 33 340-345.

Checkoway, B. N. and Gutierrez, L. M. (2006). Youth participation and community change. Journal of Community Practice, 14 (1-2): 1-9.

Cherry, L. (2011). Young voices on climate change: The Paul F-Brandwein 2010 NSTA lecture. Journal of Science Education and Technology, 20 208-213.

Chess, C. and Purcell, K. (1999). Public participation and the environment: Do we know what works? Environmental Science and Technology, 33 (16): 2685-2692.

Chokriensukchai, K. and Tamang, R. (2010). Thai youths and global warming: Media information, awareness and lifestyle activities. Applied Environmental Education and Communication, 9 (3): 198-208.

Cohen, S., Demerrit, D., Robinson, J. and Rothman, D. (1998). Climate change and sustainable development: Towards dialogue. Global Environmental Change, 8 (4): 341-371.

Cornwall, A. (2008). Unpacking 'participation': Models, meanings and practices. Community Development Journal, 43 (3): 269-283.

Cotton, D. R. E. and Alcock, I. (2012). Commitment to environmental sustainability in the UK student population. Studies in Higher Education, 1-15.

Creech, H., Buckler, C., Innes, L. and Serge, L. (1999). A youth strategy for public outreach on climate change. Winnipeg: International Institute for Sustainable Development (IISB) Business Trust.

Das Gupta, M., Engelman, R., Levy, J., Luchsinger, G., Merrick, T. and Rosen, J. E. (2014). The State of World Population 2014: The power of 1.8 billion adolescents, youth and the transformation of the future. New York: United Nations Population Fund (UNPFA).

Dawes, N. P. and Larson, R. (2011). How youth get engaged: Grounded-theory research on motivational development in organized youth programs. Development Psychology, 47 (1): 259-69.

Delores, J. (1996). Learning: The treasure within. Report to UNESCO of the International Commission on Education for the Twenty-first Century. Paris: United Nations Educational Scientific and Cultural Organization.

Department for International Development [DFID]. (2010). Youth participation in development: A guide for development agencies and policy makers. London: Department for International Development.

Department of Disaster Prevention and Mitigation [DDPM]. (n.d.-a). Department of Disaster Prevention and Mitigation Strategy Plan (2012-2016). Department of Disaster Prevention and Mitigation. Bangkok: Ministry of Interior [in Thai].

Department of Disaster Prevention and Mitigation [DDPM]. (n.d.-b). Thailand Strategic National Action Plan (SNAP) on Disaster Risk Reduction (2010-2019). Department of Disaster Prevention and Mitigation. Bangkok: Ministry of Interior.

Department of Disaster Prevention and Mitigation Committee. (2010). National Disaster Prevention and Mitigation Plan B.E. 2554-2557 (2010-2014). Department of Disaster Prevention and Mitigation. Bangkok: Ministry of Interior.

Deutsche Gesellschaft für Internationale [GIZ]. (2015). Newsletter on the climate policy in Thailand. Deutsche Gesellschaft für Internationale

Doherty, T. J. and Clayton, S. (2011). The psychological impacts of global climate change. American Psychologist, 66 (4): 265-76.

Evans, S. D. and Prilleltensky, I. (2007). Youth and democracy: Participation for personal, relational, and collective well-being. Journal of Community Psychology, 35 (6): 681-692.

Finn, J. L. and Checkoway, B. (1998). Young people as competent community builders: A challenge to social work. Social Work, 43 (4): 335-345.

Gaillard, J. C. and Pangilinan, M. L. C. J. D. (2010). Research note participatory mapping for raising disaster risk awareness among the youth. Journal of Contingencies and Crisis Management, 18 (3): 175-179.

Gemmill, B. and Bamidele-Izu, A. (2002). The role of NGOs and civil society in global environmental governance. Global environmental governance: Options and opportunities, 77-100.

Gibbs, G. R. (2007). Analyzing qualitative data. London: Sage.

Gillham, B. (2000). The research interview. London: Continuum.

Guest, G. S., MacQueen, K. M. and Namey, E. E. (2012). Applied thematic analysis. London: Sage.

Hartas, D. (2011). Young people's participation: is disaffection another way of having a voice? Educational Psychology in Practice, 27 (2): 103-115.

Hassan, A., Noordin, T. A. and Sulaiman, S. (2010). The status on the level of environmental awareness in the concept of sustainable development amongst secondary school students. Procedia - Social and Behavioral Sciences, 2 (2): 1276-1280.

Haynes, K. and Tanner, T. M. (2015). Empowering young people and strengthening resilience: youth-centered participatory video as a tool for climate change adaptation and disaster risk reduction. Children's Geographies, 13 (3): 357-371.

Head, B. W. (2011). Why not ask them? Mapping and promoting youth participation. Children and Youth Services Review, 33 (4): 541-547.

Holliday, A. (2002). Doing and writing qualitative research. London: Sage.

Innes, J. E. and Booher, D. E. (2004). Reframing public participation: strategies for the 21st Century. Planning Theory and Practice, 5 (4): 419-436.

Intergovernmental Planel on Climate Change [IPCC]. (2013). 2013: Summary for policymakers. *In:* Stocker, T. F., Qin, D., Plattner, G.-K., Tignor, M., Allen, S. K., Boschung, J., Nauels, A., Xia, Y., Bex, V. and Midgley, P. M. (eds.) Climate change 2013: The physical science basis. Contribution to Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge and New York: Cambridge University Press.

International Alliance of Leading Education Institutes [IALEI]. (2009). Climate change and sustainable Development: The response from education. International Alliance of Leading Education Institutes.

International Association for Public Participation [IAP2]. (n.d.). International Associate for Public Participation [Online]. International Associate for Public Participation. Available: www.iap2.org [Accessed August 15 2013.

International Association of Public Participation [IAP2]. (2007). Spectrum of public participation. Available: http://www.iap2.org [Accessed August 15 2013].

Irby, M., Ferber, T., Pittman, K., with Tolman, J. and Yohalem, N. (2001). Youth action: Youth contributing to communities, communities support youth. Takoma Park: The Forum for Youth Investment, International Youth Foundation.

Irvin, R. A. and Stansbury, J. (2004). Citizen participation in decision-making: Is it worth the effort? Public Administration Review, 64 (1): 55-65.

Jensen, B. B. and Schnack, K. (1997). The action competence approach in environmental education. Environmental Education Research, 3 (2): 163-178.

King, C. S., Feltey, K. and Susel, B. O. N. (1998). The question of participation: Toward authentic public participation in public administration. Public Administration Review, 58 (4): 317-326.

Kollmuss, A. and Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior? Environmental Education Research, 8 (3): 239-260.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Lawler, J. and Patel, M. (2012). Exploring children's vulnerability to climate change and their role in advancing climate change adaptation in East Asia and the Pacific. Environmental Development, 3 123-136.

Layder, D. (ed.) (2013). Doing excellent small-scale research. London: Sage.

Lenzen, M. and Murray, J. (2001). Role of equity and lifestyles in education about climate change: experiences from a large-scale teacher development program. Canadian Journal of Environmental Education, 6 (Spring): 32-51.

Levy, B. L. M. and Zint, M. T. (2012). Toward fostering environmental political participation: framing an agenda for environmental education research. Environmental Education Research, 1-24.

Mackey, G. (2012). To know, to decide, to act: the young child's right to participate in action for the environment. Environmental Education Research, 18 (4): 473-484.

Malandrakis, G., Boyes, E. and Stanisstreet, M. (2011). Global warming: Greek students' belief in the usefulness of pro-environmental actions and their intention to take action. International Journal of Environmental Studies, 68 (6): 947-963.

Marshall, C. and Rossman, G. B. (2006). Designing qualitative research. Thousand Oaks: Sage.

Matthews, H., Limb, M. and Taylor, M. (1999). Young people's participation and representation in society. Geoforum, 30 135-144.

McKeown, R. and Hopkins, C. (2010). Rethinking climate change education. Green Teacher, 89 (Summer): 17-21.

McNeill, K. L. and Vaughn, M. H. (2010). Urban high school students' critical science agency: Conceptual understandings and environmental actions around climate change. Research in Science Education, 42 (2): 373-399.

Metz, B., Berk, M., den Elzen, M., de Vries, B. and van Vuuren, D. (2002). Towards an equitable global climate change regime: compatibility with Article 2 of the Climate Change Convention and the link with sustainable development. Climate Policy, 2 (2): 211-230.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Michalos, A. C., Creech, H., McDonald, C. and Kahlke, P. M. H. (2010). Knowledge, attitudes and behaviors concerning education for sustainable development: Two exploratory studies. Social Indicators Research, 100 (3): 391-413.

Michalos, A. C., Creech, H., Swayze, N., Maurine Kahlke, P., Buckler, C. and Rempel, K. (2011). Measuring knowledge, attitudes and behaviors concerning sustainable development among tenth grade students in Manitoba. Social Indicators Research, 106 (2): 213-238.

Mogensen, F. and Schnack, K. (2010). The action competence approach and the 'new' discourses of education for sustainable development, competence and quality criteria. Environmental Education Research, 16 (1): 59-74.

Mokwena, S. (2006). Putting youth engagement into practice: A toolkit for action. London: Commonwealth Secretariat.

Mongsawad, P. (2010). The philosophy of sufficiency economy: A contribution to the theory of development. Asia-Pacific Development Journal, 17 (1): 123-143.

Najam, A., Rahman, A. A., Huq, S. and Sokona, Y. (2003). Integrating sustainable development into the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Climate Policy, 3 S9-S17.

National Economic and Social Development Board [NESDB]. (n.d.). The Eleventh Economic and Social Development Plan (2012-2016). Office of National Economic and Social Development Board. Bangkok: Office of the Prime Minister.

Neuman, L. W. (2009). Understanding research. Boston: Pearson.

O'Donogue, J., Kirshner, B. and McLaughlin, M. W. (2003). Moving youth participation forward. New Directions for Youth Development: Theory, Practice and Research. San Francisco: Jossey-Bass (Wiley Periodicals, Inc.).

Obradović, J. and Maten, A. S. (2007). Developmental antecedents of young adult civic engagement. Applied Developmental Science, 11 (1): 2-19.

Office of Basic Education Commission [OBEC]. (2008). Basic Education Core Curriculum B.E. 2552 (2008). Bangkok: Ministry of Education.

Office of Environmental Policy and Planning [OEPP]. (1997). Policy and Prospective Plan for Enhancement and Conservation of National Environmental Quality

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

(1997-2016). Office of Environmental Policy and Planning. Bangkok: Ministry of Science, Technology and Environment.

Office of Environmental Policy and Planning [OEPP]. (2000). Thailand's initial national communication under the United Nations Framework Convention on Climate Change. Bangkok: Ministry of Science, Technology and Environment.

Office of National Education Commission [ONEC]. (1999). National Education Act. Office of the Prime Minister. Bangkok: Prig wan Communication.

Office of National Education Commission [ONEC]. (2002-3). National Education Plan (2002-2016). Bangkok: Office of Prime Minister.

Office of National Education Commission [ONEC]. (2003). The National Education Act, B.E. 2542 (1999). Amendments (Second National Education Act, B.E. 2545 (2002). Office of the Prime Minister. Bangkok: Pimdeekarnpim Co. Ltd.

Office of Natural Resources and Environmental Policy and Planning [ONEP]. (2007). The National Strategies on Climate Change (2008-2012). Office of Natural Resources and Envionmental Policy and Planning. Bangkok: Ministry of Natural Resources and Environment.

Office of Natural Resources and Environmental Policy and Planning [ONEP]. (2010). Thailand's second national communication under the United Nations Framework Convention on Climate Change. Bangkok: Ministry of Natural Resources and Environment.

Office of Natural Resources and Environmental Policy and Planning [ONEP]. (2011). Environmental Quality Management Plan (2012-2016). Office of Natural Resources and Environmental Policy and Planning. Bangkok: Ministry of Natural Resources and Environment.

Office of Natural Resources and Environmental Policy and Planning [ONEP]. (2015). Climate Change Master Plan B.E. 2558-2593 (2015-2050). Office of Natural Resources and Envionmental Policy and Planning. Bangkok: Ministry of Natural Resources and Environment [in Thai].

Office of the National Economic and Social Development Board [ONESDB]. (2007). Sufficiency economy implications and applications. Bangkok: Office of the Prime Minister.

Office of the National Education Council [ONEC]. (2005). National Education Standards. Bangkok: Communications Ltd Partnership.

Office of Welfare Promotion Protection and Empowerment of Vulnerable Groups [OPP]. (2007). National Child and Youth Development Promotion Act B.E. 2550 (2007). Office of Welfare Promotion Protection and Empowerment of Vulnerable Groups. Bangkok: Ministry of Social Development and Human Security.

Office of Welfare Promotion Protection and Empowerment of Vulnerable Groups [OPP]. (2012). The National Child and Youth Development Plan B.E. 2555-2559 (2012-2016). Office of Welfare Promotion Protection and Empowerment of Vulnerable Groups. Bangkok: Federation of Agriculture Cooperatives of Thailand.

Ojala, M. (2012). Hope and climate change: The importance of hope for environmental engagement among young people. Environmental Education Research, 18 (5): 625-642.

Percy-Smith, B. and Burns, D. (2012). Exploring the role of children and young people as agents of change in sustainable community development. Local Environment, 1-17.

Petrasek MacDonald, J., Harper, S. L., Cunsolo Willox, A., Edge, V. L. and Rigolet Inuit Community, G. (2013). A necessary voice: Climate change and lived experiences of youth in Rigolet, Nunatsiavut, Canada. Global Environmental Change, 23 (1): 360-371.

Pruneau, D., Khattabi, A. and Demers, M. (2010). Challenges and possibilities in climate change education. US-China Education Review, 7 (9): 15-24.

Pruneau, D., Liboiron, L., Vrain, É., Gravel, H., Bourque, W. and Langis, J. (2001). People's ideas about climate change: A source of inspiration for the creation of educational programs. Canadian Journal of Development Studies/Revue canadienne d'études du développement, 6 (Spring): 121-138.

Rajani, R. (2001). Participation rights of adolescents. New York: United Nations Children's Fund.

Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. Biological Conservation, 141 (10): 2417-2431.

Rioplustwenties. (2011). Rio+20 United Nations Conference on Sustainable Development - An introduction for children and youth. Brussels: Rio+twenties.

Robinson, J., Bradley, M., Busby, P., Connor, D., Murray, A., Sampson, B. and Soper, W. (2006). Climate change and sustainable development: Realizing the opportunity. AMBIO: A Journal of the Human Environment, 35 (1): 2-8.

Robinson, J. and Herbert, D. (2001). Integrating climate change and sustainable development. International Journal of Global Environmental Issues, 1 (2): 130-149.

Roulston, K. (2010). Reflective interviewing: A guide to theory and practice. London: Sage.

Rowe, G. and Frewer, L. J. (2000). Public participation methods: A framework for evaluation. Science Technology Human Values, 25 (1): 3-29.

Saldaña, J. (2013). Coding manual for qualitative researchers. London: Sage.

Save the Children. (2010). Living with disasters and changing climate: Children in Southeast Asia telling their stories about disaster and climate change. Bangkok: Save the Children.

Schreier, M. (2012). Qualitative content analysis in practice. London: Sage.

Schreiner, C., Henriksen, E. K. and Kirkeby Hansen, P. J. (2005). Climate education: Empowering today's youth to meet tomorrow's challenges. Studies in Science Education, 41 (1): 3-49.

Selby, D. and Kagawa, F. (2010). Runaway climate change as challenge to the 'closing circle' of education for sustainable development. Journal of Education for Sustainable Development, 4 (1): 37-50.

Shepardson, D. P., Niyogi, D., Choi, S. and Charusombat, U. (2009). Seventh grade students' conceptions of global warming and climate change. Environmental Education Research, 15 (5): 549-570.

Shepardson, D. P., Niyogi, D., Choi, S. and Charusombat, U. (2010). Students' conceptions about the greenhouse effect, global warming, and climate change. Climatic Change, 104 (3-4): 481-507.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Shepardson, D. P., Niyogi, D., Roychoudhury, A. and Hirsch, A. (2012). Conceptualizing climate change in the context of a climate system: implications for climate and environmental education. Environmental Education Research, 18 (3): 323-352.

Shier, H. (2001). Pathways to participation: Openings, opportunities, and obligations. Children and Society, 15 107-117.

Swart, R., Robinson, J. and Cohen, S. (2003). Climate change and sustainable development: Expanding the options. Climate Policy, 3 S19-S40.

Tanwattana, P. and Murayama, H. (2014). Community planning and the policy process for regional revitalization against disasters: Thailand's readiness and the Japanese Experience. Policy Science, 21 (2): 27-42.

Thompson, R. (2002). Reporting the results of computer-assisted analysis of qualitative research data. Forum: Qualitative Social Research, 3 (2): Art. 25.

Timmerman, G. (2009). Youth policy and participation. Children and Youth Services Review, 31 (5): 572-576.

Tong, T. M. T., Shaw, R. and Takeuchi, Y. (2012). Climate disaster resilience of the education sector in Thua Thien Hue Province, Central Vietnam. Natural Hazards, 63 (2): 685-709.

United Nations [UN]. (2002). Plan of implementation of the World Summit on Sustainable Development A/CONF.199/20. Johannesburg: United Nations.

United Nations [UN]. (2009). Youth participation in the democratic processes. 121st Assembly of the Inter-Parliamentary Union and Related Meetings. Geneva: United Nations.

United Nations [UN]. (2010). The World Youth Report: Youth and climate change. New York: United Nations.

United Nations [UN]. (2011). World populations prospects: The 2010 revision, CD-ROM edition. Department of Economic and Social Division.

United Nations [UN]. (2012). United Nations Systemwide Action Plan on Youth [Online]. Available: unyouthswap.org [Accessed August 6 2015].

United Nations Conference on Environment and Development [UNCED]. (1992a). Agenda 21. New York: United Nations.

United Nations Conference on Environment and Development [UNCED]. (1992b). The Rio Declaration on Enviornment and Development. New York, USA: United Nations.

United Nations Development Programme [UNDP]. (2014). Advancing human development through the ASEAN Community: Thailand human development report 2014. Bangkok: United Nations.

United Nations Economic and Social Commission for Asia and the Pacific [ESCAP] and United Nations Office for Disaster Risk Reduction [UNISDR]. (2012). Reducing vulnerabilities and exposure to disasters: the Asia-Pacific disaster report. Bangkok: United Nations Economic and Social Commission for Asia and the Pacific and United Nations Office for Disaster Risk Reduction.

United Nations Educational Scientific and Cultural Organization - United Nations Environment Programme [UNESCO-UNEP]. (1976). The Belgrade Charter. Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization - United Nations Environment Programme [UNESCO-UNEP]. (2011). Climate change starter's guidebook: An issues guide for education planners and practitioners. Paris: United Nations Educational Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (1978). Final report of the Intergovernmental Conference on Environmental Education, Tbilisi. Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (2000). The Dakar Framework for Action - Education for All: Meeting our collective commitments. Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (2004). Empowering youth through national policies. Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (2006). Framework for the UN DESD international implementation scheme. Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (2013). Proposal for a Global Action Programme on Education for Sustainable Development as follow-up to the United Nations Decade of Education for Sustainable Devleoment (DESD) after 2014 (37C/57). Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (2014). UNESCO Roadmap for implementing the Global Action Programme on Education for Sustainable Development. Paris: United Nations Educational, Scientific and Cultural Organization.

United Nations Educational Scientific and Cultural Organization [UNESCO]. (n.d.). Position paper on education post 2015 (ED-14/EFA/POST-2015/1). United Nations Educational, Scientific and Cultural Organization.

United Nations Framework Convention on Climate Change [UNFCCC]. (1992). United Nations Framework Convention on Climate Change. New York: United Nations.

United Nations Framework Convention on Climate Change [UNFCCC]. (1998). Kyoto Protocol to the United Nations Framework Convention on Climate Change. New York: United Nations.

United Nations Framework Convention on Climate Change [UNFCCC]. (2012a). Doha Ammendment to the Kyoto Protocol. Doha: United Nations.

United Nations Framework Convention on Climate Change [UNFCCC]. (2012b). Report of the Conference of the Parties on its eighteenth session, Decision 15/CP.18 Doha work programme on Article 6 of the Convention (FCCC/CP/2012/8/Add.2). Doha.

United Nations Framework Convention on Climate Change [UNFCCC]. (2013). Summary report on the 1st dialogue on Article 6 of the Convention. Note by the secretariat (FCCC/SBI/2013/13). Warsaw.

United Nations Framework Convention on Climate Change [UNFCCC]. (2014a). The Lima Ministerial Declaration on Education and Awareness-raising (FCCC/CP/2014/L.1/Rev.1). Lima.

United Nations Framework Convention on Climate Change [UNFCCC]. (2014b). Summary report on the 2nd dialogue on Article 6 of the Convention. Note by the secretariat (FCCC/SBI/2014/15). Lima.

United Nations General Assembly. (1987). International Decade for Natural Disaster Reduction (A/RES/42/169). New York: United Nations.

United Nations General Assembly. (1989a). Convention on the Rights of the Child (A/RES/44/25). New York: United Nations.

United Nations General Assembly. (1989b). International Decade for Natural Disaster Reduction (A/RES/44/236). New York: United Nations.

United Nations General Assembly. (1995). World Programme of Action for Youth to the year 2000 and beyond (A/RES/50/81). New York: United Nations.

United Nations General Assembly. (2000). International Decade for Natural Disaster Reduction: successor arrangements (A/RES/54/219). New York: United Nations.

United Nations General Assembly. (2002a). International Strategy for Disaster Reduction (A/RES/56/195). New York: United Nations.

United Nations General Assembly. (2002b). United Nations Environment Programme Report of the Governing Council (A/RES/57/25). New York: United Nations.

United Nations General Assembly. (2002c). A world fit for children (A/RES/S-27/2). New York: United Nations.

United Nations General Assembly. (2003a). International Strategy for Disaster Reduction (A/RES/57/256). New York: United Nations.

United Nations General Assembly. (2003b). International Strategy for Disaster Reduction (A/RES/58/214). New York: United Nations.

United Nations General Assembly. (2004). International Strategy for Disaster Reduction (A/RES/59/231). New York: United Nations.

United Nations General Assembly. (2012a). The Future We Want (A/RES/66/288). New York: United Nations.

United Nations General Assembly. (2012b). International Strategy for Disaster Reduction (A/RES/66/199). United Nations.

United Nations General Assembly. (2014a). Follow-up to the United Nations Decade of Education for Sustainable Development (2005-2014): The Global Action Programme on Education for Sustainable Development (A/RES/69/211). United Nations.

United Nations General Assembly. (2014b). Report of the Open Working Group of the General Assembly on Sustainable Development Goals (A/68/970). New York: United Nations.

United Nations General Assembly. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030 (A/69/L.97). New York: United Nations.

United Nations International Strategy for Disaster Reduction [UNISDR]. (2011). Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters mid-term review 2010-2011. Geneva: United Nations International Strategy for Disaster Reduction.

United Nations Joint Framework Initiative on Children Youth and Climate Change. (2009). Growing together in a changing climate: The United Nations, young people, and climate change. Halmstad: United Nations Joint Framework Initiative on Children, Youth and Climate Change.

United Nations Joint Framework Initiative on Children Youth and Climate Change. (2010). Youth Participation in the UNFCCC Negotiation Process: The United Nations, young people, and climate change. United Nations.

United Nations Office for Disaster Risk Reducation [UNISDR] and Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector [GADRRRES]. (2014). Comprehensive school safety. United Nations Office for Disaster Risk Reducation and Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector,.

United Nations Office for Disaster Risk Reduction [UNISDR] and Plan International. (2012). Children's action for disaster risk reduction: Views from children in Asia. Bangkok: United Nations Office for Disaster Risk Reduction and Plan International.

Vromen, A. and Collin, P. (2010). Everyday youth participation? Contrasting views from Australian policymakers and young people. Young, 18 (1): 97-112.

Walshe, N. (2013). Exploring and developing student understandings of sustainable development. The Curriculum Journal, 24 (2): 224-249.

Watts, R. J. and Flanagan, C. (2007). Pushing the envelope on youth civic engagement: A developmental and liberation psychology perspective. Journal of Community Psychology, 35 (6): 779-792.

Wesselink, A., Paavola, J., Fritsch, O. and Renn, O. (2011). Rationales for public participation in environmental policy and governance: Practitioners' perspectives. Environment and Planning, 43 (11): 2688-2704.

White, R. (2011). Climate change, uncertain futures, and the sociology of youth. Youth Studies Australia, 30 (3): 13-18.

Wilbanks, T. (2003). Integrating climate change and sustainable development in a place-based context. Climate Policy, 3S1 S147-S154.

World Bank. (1994). The World Bank and participation. Washington: Operations Policy Department.

World Bank. (2007). World development report 2007. Washington: World Bank.

World Bank. (2011). Life expectancy at birth, total (years) [Online]. Available: http://data.worldbank.org/indicator/SP.DYN.LE00.IN [Accessed June 30 2013.

World Conference on Disaster Reduction {WCDR]. (2005). Natural disaster reduction: Economic aspects of disaster reduction for sustainable development. Kobe: United Nations.

World Conference on Disaster Risk Reduction [WCDRR]. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030 (A/CONF.244/CRP.1). Sendai: United Nations.

World Conference on Environment and Develoment [WCED]. (1987). Our common future. Oxford: Oxford University Press.

World Conference on Natural Disaster Reduction. (1994). Report of the World Conference on Natural Disaster Reduction (A/CONF.172/9) 23-27 May 1994. Yokohama.

YOUNGO Article 6 Working Group. (2011). Enhanced youth participation and education in climate change: the Article 6 implementation toolkit. European Commission.

Youniss, J., Bales, S., Christmas-Best, V., Diversi, M., McLaughlin, M. and Silbereisen, R. (2002). Youth civic engagement in the twenty-first century. Journal of Research on Adolescence, 12 (1): 121-148.

Youniss, J. and Hart, D. (2006). The cirtue In youth civic participation. Diskurs Kindheits-und Jugendforschung Heft. Frankfurt: Deutsches Institut für Internationale Padagogische Forschung (DIPF).

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDICES

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX A

INFORMED CONSENT FORM

Interview No. .....

Interview Form

Subject: Interview on youth participation in responding to climate change in Thailand

Remarks

1. This interview is a part of the dissertation research of Miss Joanne Narksompong, a doctoral candidate in the Environment, Development and Sustainability Program at Chulalongkorn University.
2. The purpose of this intervew is to survey thoughts and attitudes of youth and key stakeholders in Bangkok Metropolitan and its surrounding areas as part of the study entitled "Youth participaiton *in responding to climate change issues in the context of sustainable development in Thailand."*
3. The interview consists of 5 sections that will take 45 - 60 minutes to complete.
   Section 1 General information of respondent
   Section 2-5 In-depth interview

To facilitate the research process, the interviewer will take notes and record the interview. All interview data will be handled so as to protect their confidentiality. Therefore, no names will be mentioned and the information will be coded. The results of this study may be published in an academic journal and dissertation. By signing below, the respondant acknowledges these conditions and agrees to be a voluntary participant in this research.

Your cooperation in this research is greatly appreciated.

..... (Respondent signature)

..... (Parent/Guardian signature)

..... (Interviewer signature)

APPENDIX B

INTERVIEW GUIDELINES FOR KEY INFOMRANTS

1. General Information about Organization

1.1. What are the primary activities and focus of your organization?

1.2. What activities/ programs do you have related to climate change, if any?

2. Youth Policies

2.1. What activities/ programs do you have related to youth?

2.2. How are youth viewed by your organization?

2.3. Does your agency work to involve youth in issues? In what ways?

3. Youth Engagement and Participation Strategies

3.1. Is there a specific department for working with and engaging youth?

3.2. How does your organization involve youth? What is the approach to involving youth?

3.3. What is the ideal way to engage youth?

3.4. How have youth responded to the methods used by your organization?

3.5. Do youth have the opportunity to make decisions regarding programs and policies?

3.6. Do youth have the opportunity to develop and lead their own programs?

3.7. Does your organization collaborate with other organizations related to youth?

3.8. How does your organization work to get youth involved with climate change?

3.9. What has been the feedback from youth on these programs?

3.10. What improvements have been made based on feedback from youth

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

APPENDIX C

INTERVIEW GUIDELINES FOR YOUTH

Demographic Information

1. Sex ☐ male ☐ female
2. Age _____
3. Birthplace _____
4. Current residency _____ years _____ months
5. Mother's occupation _____ Father's occupation
6. Current education

☐ lower secondary school ☐ undergraduate program

☐ upper secondary school ☐ graduate program

☐ vocational certificate ☐ doctoral program

7. Completed education (institution/school) _____
8. Employment

   ☐ employed occupation _____monthly salary _____

   ☐ not employed
9. Do you think that conservation of environmental resources is important?

   ☐ very important ☐ neutral

   ☐ important ☐ not important
10. Have you participated in environmental/ conservation activities?

    ☐ yes ☐ no

    If yes, please indicate how often you participate in these types of activities.

    ☐ once a year ☐ once a week

    ☐ 2-3 times a year ☐ less than once a year

    ☐ once a month
11. Are you a member of an environmental/ conservation group?

    ☐ yes length of membership _____ years _____ months

    ☐ no

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

1. Beliefs, Worldviews, and Perceptions

1.1. General and Environmental Concerns

1.1.1. What issues are you concerned about currently? and for the future?

1.1.2. Do you have concerns about the environment? If so, what are they?

1.2. Awareness and Understanding of Climate Change

1.2.1. What is climate change (global warming) and how will it impact the future?

1.2.2. What activities contribute to climate change? What activities can help reduce climate change?

1.3. Views and Perceptions Regarding Climate Change and Sustainable Development

1.3.1. Do you think climate change is important in your current life? If so, how?

1.3.2. How will climate change impact your future life?

1.3.3. How do you think climate change will impact sustainability? (e.g. on your family, your community, and society)

1.3.4. How concerned are your peers about climate change?

1.4. Sources of Information and Media about Climate Change

1.4.1. How do you get information about environmental issues, such as global warming and climate change?

1.4.2. How reliable do you think this information is? Is this information adequate?

Chulalongkorn University

1.4.3. How would you like to get more information global warming and climate change?

2. Agency and Participation

2.1. Youth Political and Local Participation

2.1.1. Do you vote in local/ national elections? How often? (If over 18 years old)

2.1.2. Are you a member of civic organizations? If so, which ones?

2.1.3. What opportunities do you have to be involved in your community? Events/ organizations?

2.1.4. Do you think it is important for young people to express views and opinions on matters that affect them? Do they have the opportunities to do so?

2.1.5. Do you feel young people are involved enough in decision-making on matters that affect them? Explain.

2.2. Youth Participation in Climate Change – Individual

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

2.2.1. Who do you feel needs to take responsibility for responding to climate change? (e.g. government, business, individuals, developed vs. developing countries)

2.2.2. What activities/ actions have you participated in to reduce carbon emissions? (mitigation)

2.2.3. What activities/ actions have you participated in to prepare for climate change impacts? (adaptation)

2.2.4. Have you participated in any political actions/ activism? (In general and specifically regarding the environment or climate change)

2.2.5. Do you feel your actions can make a difference towards climate change? Explain.

2.2.6. What would help prepare you to better respond to climate change?

2.3. Youth Participation in Climate Change – Peers

2.3.1. Do you think young people are adequately informed about climate change?

2.3.2. Do you think young people are adequately prepared to respond to climate change?

2.3.3. What would you think would help to increase understanding and concern about climate change?

2.3.4. How can we better prepare young people to respond to climate change?

2.4. Youth Agency

2.4.1. Do you feel that adults listen to and act upon your comments/ concerns?

2.4.2. How do adults/ authorities support or hinder your/ youth involvement?

3. For Youth Already Active in Environmental Issues: (use if applicable)

3.1. Current Youth Participation in Environmental Issues

3.1.1. Describe your participation in your environmental organization.

3.1.2. What is the focus/ mission of your organization?

3.1.3. What activities does your group engage in? Does your group engage in political action or activism?

3.1.4. Who are the members of your organization? What is the age range?

3.1.5. Is the organization adult-led, youth-led or power shared between adults and youths?

3.1.6. How does your group seek to engage other young people? Community members? Others

Chulalongkorn University

APPENDIX D

CODE FRAME

- action>activism: refers to the efforts to promote, impeded, or direct social, political, economic or environmental change, such as a demonstration, protest, etc.
- action>climate_action: referring to actions taken that have the ultimate goal of limiting and/or reducing the concentration of greenhouse gases in the atmosphere or the impacts of climate change.
- action>collective_action: referring to action taken together by a group of people towards a common goal.
- action>continuous: referring to action that occurs without interruption.
- action>direct: referring to actions taken directly by an individual; practical action; personal action.
- action>transfer_home: relating to actions that are transferred from where they are learned to behaviours at home.
- action>youth_action: referring to actions taken by youth for political, social or environmental action.
- activities: a things that a person or group does or has done, usually referring to program activities.
- activities>adaptation: referring to activities undertaken to reduce the adverse consequences of climate change, as well as to capitalize any beneficial opportunities.
- activities>camps: referring to activities occurring in a recreational setting providing facilities for outdoor activities, sports, crafts and other special interests, typically with overnight accommodations.
- activities>climate_change: activities responding to climate change, either to reduce greenhouse gas emissions (mitigation) or to limit the risks posed by climatic changes (adaptation).
- activities>competition: an event or contest in which people compete.
- activities>customized: activities which are modified to suit a particular objective or audience.

Chulalongkorn University

- activities>ecosystem_restoration: activities which seek to renew and reestablish ecological sites that are degraded and destroyed.
- activities>events: activities related to planned public or social occasions.
- activities>internship: activities that relate to on-the-job training or supervised practical training for a student or recent graduate that can be paid or unpaid.
- activities>mitigation: activities that seek to reduce or prevent emissions of greenhouse gases. It can involve using new technologies and renewable energies, increasing energy efficiency, increasing the capacity of carbon sinks or changing management practices or consumer behavior.
- activities>outreach: activities to extend the reach of information or services to populations who might not otherwise have access.
- activities>participatory: activities which seeks to have a particular person or group persons take part or share in the process.
- activities>training: activities relating to the action of teaching a particular skill, knowledge or type of behavior.
- activities>tree_planting: activities related to the process of transplanting tree seedlings, generally for forestry, land reclamation or landscaping purposes.
- activities>youth_council: related to activities where youth are engaged in community decision-making and exist on local, state, provincial, regional, national and international levels.
- adults: a person who is fully developed and mature in terms of psychological development.
- advocacy: relating to public support or recommendation of a particular cause or policy.
- affective: relating to moods, feelings and attitudes; emotions.
- agriculture: the science or practice of farming, such as cultivating land, raising crops and raising livestock.
- alternative_energy: energy generated in ways that do not deplete natural resources or harm the environment, such as solar, wind, or nuclear energy, that can replace or supplement fossil fuel sources.
- approach: relating to the way of dealing with something.
- approach>accessible_everyone: relating to the way of dealing with something so that it is accessible to everyone.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

- approach>citizen_science: relating to the way of using scientific research that is conducted, in whole or in part, by amateur or nonprofessional scientists (also known as crowd-sourced science, civic science, volunteer monitoring or networked science).
- approach>environmental_education: relating to the process that allows individuals to gain awareness of their environment, engage in problem solving and take action to improve the environment.
- approach>learner_centered: relating to the way of teaching that shits the focus of instruction from the teacher to the student.
- approach>right_based: relating to the way of dealing with development that empowers rights holders to know and claim their rights as well as increasing accountability for institutions to respect, protect and fulfill these rights.
- approach>verbal: relating to the way of using spoken words to convey messages.
- approach>volunteerism: relating to the way of involving people in volunteering, especially for social and environmental issues.
- ASEAN: related to Association of Southeast Asian Nations
- attitude: a way of thinking or feeling or behaving that reflects a state of mind or disposition.
- awareness: the state or condition of being aware; having knowledge or perception of a situation or fact.
- barrier: a circumstance or obstacle that keeps people or things apart or prevents progress
- barrier>communication: a circumstance or obstacle that prevents communication.
- barrier>data: a circumstance or obstacle that related to insufficient, unavailable or inconsistent data.
- barrier>expertise: a circumstance or obstacle that derives from a lack of expert skill or knowledge in a particular field.
- barrier>funding: a circumstance or obstacle that arises from the lack of financial resources to support a need, program or project.
- barrier>implementation: a circumstance or obstacle to putting a decision or plan into effect; the inability to properly execute any idea, model or method.

- barrier>lack_coordination: a circumstance or obstacle that arises when the process of organizing people, groups, or organizations fails to enable them to work together effectively.
- barrier>long_term: a circumstance or obstacle that occurs because lasts for, relates to, or involves a long period of time.
- barrier>mandate: a circumstance or obstacle that is related to the official order or commission to do something.
- barrier>overlap: a circumstance or obstacle arising from common or shared objectives of groups or organizations.
- barrier>scale: a circumstance or obstacle that arises due to the relative size or extent of something.
- barrier>time: a circumstance or obstacle that arises from limited or insufficient time.
- beneficiaries>disdvantaged: a person or group that receives benefits, profits or are targeted in programs because they are viewed as being disadvantaged in society.
- beneficiaries>youth: a person or group that receives benefits, profits or are targeted in programs because they are youth in society.
- benefit>monetary_savings: an advantage or project gained from something that is in the form of money or currency.
- biodiversity: related to the variety of life in the world or in a particular habitat or ecosystems.
- BMA: related to Bangkok Metropolitan Administration
- build_capacity: the process of developing and strengthening the skills, abilities and resources of a particular individual, group, organization, etc.
- career: an occupation undertaken for a significant period of a person's life with opportunities for advancement.
- CDM: related to Clean Development Mechanism
- change>habits_behaviors: the process of altering ones regular practices and patterns of behaviour.
- climate_change: related to a change in global or regional climate patterns that is attributed to the increased levels of atmospheric carbon dioxide produced by human activities.

Chulalongkorn University

- climate_change>causes: related to the causes of climate change.
- climate_change>perception: related to the regarding, understanding or interpreting of climate change.
- collaboration: the action of working with others to produce or create something.
- collaboration>network: the action of working with others to produce or create something through the use of a group or system of interconnected people or things.
- collaboration>partnership: the action of working with others to produce or create something through the state of being a partner or partners.
- concern: policy related to Article 6 of the UNFCCC
- concern_others: related to the feeling of worry or care about other people, can be extended to other living things.
- concerns>environment: related to the feeling of worry or care about the environment.
- concerns>future: related to the feeling of worry or care about issues in the future.
- concerns>peer: related to the feelings of worry or care that their peers have.
- concerns>present: related to the feeling of worry or care about issues in the present.
- conservation: the act of conserving; preventing of injury, decay, waste or loss; preservation, referring to the planned management of natural resources to prevent exploitation or destruction.
- corporate: of or relating to a corporations, especially a large company or group.
- corruption: dishonest or fraudulent conduct of those in power, typically involving bribery; the misuse of public power.
- crime: illegal activities.
- CSR: related to Corporate Social Responsibility concept and activities
- cultural_differences: related to the fundamental differences among people arising from national, ethnic, and cultural understandings that affect beliefs, practices, and behaviour.
- daily_life: related to the activities and experiences that make up a person's normal existence.

- deforestation: related to the clearing of trees, transforming a forest into cleared land.
- dialogue: related to a conversation between two or more people; discussion.
- disasters: related to a sudden event, such as an accident or natural catastrophe, that causes damage or loss of life. These events can seriously disrupt the functioning of a community or society.
- donor: a person who donates something, especially money to a fund or charity.
- economic: related to economics or the economy.
- education>CCE: the process of education which includes understanding of climate systems, climate science, the impacts of climate change, mitigation and/or adaptation to climate change and related issues.
- education>ESD: the process of education that allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future and promotes competencies like critical thinking and taking action for sustainable development.
- education>life_skills: the process of education to provide skills that are necessary or desirable for full participation in everyday life.
- education>reform: the process of making changes to the educational system or practices related to education.
- education>science: education concerned with sharing science content and process with individuals not part of the scientific community.
- education_access: the ability of all people to have equitable opportunities to education, regardless of their social class, gender, ethnicity or disabilities.
- educational_standards: the learning standards that define the knowledge and skills students should possess at various points in their educational career.
- energy_reduction: the act of reducing or conserving the amount of energy consumed in a process or system, or by an organization or society.
- energy_use: the act of using energy.
- environment: the surroundings or conditions in which a person, animal or plant lives or operations; the natural world
- environment>pollution: the act of polluting or the state of being polluted; the introduction of harmful or poisonous substances or products into the environment.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

- environmental_education>curriculum: relating to the curriculum used to teach environmental education, typically mutli-disciplary in nature.
- equity: related to being fair and impartial.
- evaluation_monitoring: the making of a judgment or assessment about something using criteria given be a set of standards.
- express_views: related to saying or stating one's thoughts or opinions.
- feedback: related to information about reactions to activities or programs, used as a basis for improvement.
- feedback>teachers: related to information about reactions to activities or programs given by teachers, used as a basis for improvement
- feedback>youth_feedback: related to information about reactions to activities or programs given by youth, used as a basis for improvement.
- food_security: related to the sate of having reliable access to sufficient quantity of affordable, nutritious food necessary for an active and healthy life.
- funding: related to the money provided for a particular purpose.
- gender: related to the state of being male or female, usually referencing social and cultural differences rather than biological ones.
- global_warming: the term used to describe a gradual increase in the average temperature of the Earth's climate system and its related effects.
- globalization: related to the process of international integration due to the worldwide movement and interchange of economic, financial, trade, communications and culture.
- health: related to a person's mental or physical condition or well-being.
- holistic: characterized by comprehension of the parts of something as intimately interconnected and explicable only by reference to the whole; relating to or concerned with wholes or with complete systems.
- ice_melting: related to the melting of arctic ice and Antarctic ice sheets due to global warming.
- information: related to communication of facts or reception of knowledge.
- infrastructure: referring to the basic physical and organizational structures and facilities (e.g., buildings, roads and power supplies) serving a country, city or area

- integrated_curriculum: related to the integration or unification of subjects and experiences in a curriculum; multidisciplinary, interdisciplinary and transdisciplinary.

- knowledge: related to the facts, information and skills gained through experience or association.

- knowledge>climate_change: the facts, information and skills gained through experience or association related to climate change.

- knowledge>difficult: the difficulty in understanding and acquiring the facts, information and skills gained through experience or association

- knowledge>environment: the facts, information and skills gained through experience or association related to the environment.

- knowledge>later_use: related to the facts, information and skills gained through experience or association that are used or become relevant to the learner later on.

- knowledge>misunderstanding: related to the misunderstanding or confusion of the facts, information and skills gained through experience or association.

- knowledge>scientific_process: the facts, information and skills gained through experience or association related to the scientific process of investigation.

- knowledge>societal: the facts, information and skills gained through experience or association related to societal issues and context.

- knowledge_action_gap: related to the occurrence of an individual's knowledge not correlating to his or her actions.

- land_use: related to the management and modification of natural environment into built environments.

- language: related to the system of communication, either spoken or written, understood by a large group of people.

- learning>experiential: related to the process of learning through experiences; learning through reflection on doing.

- learning>fun: related to the process of learning that the learner considers to be enjoyable.

- learning>youth_appropriate: related to the process of learning that is appropriate of youth in terms of content, approach and delivery.

- leverage: related to the ability to influence a system in a way that multiples the outcomes of one's efforts without a corresponding increase in the use of resources; also used to identify opportunities and entry points
- lifestyle: related to the way in which a person or group lives.
- lifestyle>environmentally_friendly: related to the way in which a person or group lives that seeks to reduce the impact on the environment.
- limitation: related to a limiting rule or circumstance; restriction.
- local_curriculum: related to a curriculum which is customized to meet the conditions of the context of the local community.
- location>Central: related to the location of activities in the central region of Thailand.
- location>East: related to the location of activities in the eastern region of Thailand.
- location>home: related to the location of activities in the home.
- location>learning_centers: related to the location of activities in learning centers.
- location>North: related to the location of activities in the northern region of Thailand.
- location>Northeast: related to the location of activities in the northeastern region of Thailand.
- location>rural: related to the location of activities in rural areas.
- location>school: related to the location of activities in schools.
- location>South: related to the location of activities in the southern region of Thailand.
- location>urban: related to the location of activities in urban areas.
- location_specific: related to the activities that are specific to the location.
- media: the main means of mass communication (especially television, radio, newspapers and the Internet) regarded collectively.
- media>books: related to media in the form of books.
- media>celebrity: related to media that focuses on celebrities or persons of note.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

- media>documentary: related to media that is in the form of a documentary that provides a factual record or report.
- media>infographics: related to media that is the form of infographics, a visual image, such as a chart or diagram used to represent information or data.
- media>internet: related to media that is derived or communicated via the Internet
- media>magazine: media that is the form of a magazine or periodical publication containing articles and illustrations.
- media>newspaper: related to media that is the form of a newspaper, or printed publication containing news, feature articles, advertisements and correspondence.
- media>print_posters: media that is the form of print or posters.
- media>radio: related to media that is in the form of radio.
- media>social_media: media that is derived or communicated via social media in online communities and networks.
- media>TV: related to media in the form of television.
- media>video: related to media that is the form of video, or recordings of moving visual images.
- message: related to the underlying theme or idea.
- message>change_world: related to the underlying theme or idea to change the world.
- message>easy_action: related to the underlying theme or idea to take action in a simple, easy way.
- message>good_deed: related to the underlying theme or idea to engage in good deeds or that the act is a good deed.
- message>help_others: related to the underlying theme or idea to help others or that the act helps others.
- message>inspiration: related to the underlying theme or idea that seeks to inspire the listener.
- metaphor: related to a thing regarded as representative or symbolic of something else, usually abstract.
- migration: related to the movement from one place to another.

- mindset: related to the established set of attitudes held b someone or a particular way of thinking.
- MOE: related to Ministry of Education
- MOEn: related to Ministry of Energy
- MONRE: related to the Ministry of Natural Resources and Environment
- MONRE>DEQP: related to the Ministry of Natural Resources and Environment, Department of Environmental Quality Promotion
- MONRE>ONEP: related to the Ministry of Natural Resources and Environment, Office of Natural Resources and Environmental Policy and Planning
- MS: related to the Ministry of Science
- MSDHS: related to the Ministry of Social Development and Human Security
- NGOs: related to a non-governmental organization that is neither a part of a government nor a conventional for-profit business.
- no_department: organizations that do not have a department specifically for youth.
- nutrition: related to food and nourishment necessary for health and growth.
- operations: related to the fact or condition, process or manner of functioning or operating.
- operations>conflicts: related to the conflicts arising in operations.
- operations>increase_capacity: related to the increase of capacity of operations.
- operations>marketing: related to the marketing aspects of operations.
- operations>registration: related to the registration aspects of operations.
- operations>staff: related to the staff and human resource aspects of operations.
- operations>sustainable: related to the sustainability of operations.
- opportunities: related to a set of circumstances that makes it possible to do something or allow something to occur.
- ozone: a colorless unstable gas that is found in a layer high in the earth's atmosphere; a form of oxygen that has three atoms in its molecule.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

- participation>public_participation: related to the process by which organizations consult interested or affected individuals, organizations, and government agencies before making a decision.
- participation>youth_participation: related to the active engagement of youth in expressing views, taking action and being induced in decision-making in issues that concern them.
- partners: a person who takes part in an undertaking with another or others
- Plan: related to Plan International, an international children's development organization
- policy>climate_change: policy related to climate change
- policy>disaster: policy related to disasters
- policy>education: policy related to education.
- policy>environment: policy related to the environment.
- policy>national_policy: related to policy at the national level.
- policy>UNFCCC>article6: policy related to Article 6 of the UNFCCC
- policy>youth: policy related to youth.
- poverty: related to the state of being poor and lacking money or material possessions.
- problem>find_solution: related to identifying the solutions to a problem.
- quality: related to the standard of something as measured against other things of a similar kind; the degree of excellence of something.
- rapport: related to the harmonious relationship in which the people and groups concerned communicate well with each other.
- reason>utilization: related to reasons given to increase the use of a material to the maximum.
- reduce_emissions: related to the reduction of greenhouse gas or carbon dioxide emissions
- reduce_foodwaste: related to the reduction of food loss by food that is discarded or lost uneaten.
- reduce_waste: related to the reduction in any form of waste.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

- release_emissions: related to the production or discharge of greenhouse gas or carbon dioxide emissions.
- reliability_sources: related to the extent that the sources of information can be relied on or depended on.
- religion: related to a particular system of faith and worship.
- religion>Buddhism: related to a particular system of faith and worship grown out of the teachings of Gautama Buddha.
- research: related to systematic investigation or study to establish facts and reach new conditions.
- responsibility: the state or fact of having a duty to deal with something or being accountable for something.
- role: related to the socially or organizationally expected rights, obligations and behavior patterns associated with a particular social status.
- schools>abroad: related to schools abroad, not in Thailand
- schools>ecoschool: related to schools with eco-school concept, usually with a specific organization
- schools>international: related in international schools, in Thailand or abroad
- schools>primary: related to primary schools, grades 1-6
- schools>secondary: related to secondary schools, grades 6-12
- schools>Thai: related to schools in Thailand, public or private schools
- sea_level: related to sea level or sea level rise
- seasons: related to seasons, marked by particular weather patterns and daylight hours resulting from the Earth's changing position relative to the sun
- speaker: person speaking
- stakeholder>environment: related to the consideration of the environment as a stakeholder
- strategy: related to a plan of action or policy designed to achieve a major or overall aim
- survival: related to the state or fact of continuing to live or exist

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

- sustainability: related to an ability or capacity of something to be maintained or to sustain itself
- sustainability>business: related to an ability or capacity of a business to be maintained or to sustain itself
- sustainability>livelihood: related to an ability or capacity of a person or community to maintained or to sustain their livelihood; can cope and recover from stresses and shocks
- sustainability>sufficiency_economy: related to an ability or capacity of something to be maintained or to sustain itself through the use of the philosophy of sufficiency economy
- sustainability>sustainable_consumption: related to an ability or capacity of something to be maintained or to sustain in terms of consumption; improving efficiency, increase use of renewable energy sources, minimizing waste, taking a life cycle perspective
- sustainability>sustainable_development:
- target: the person, group or topic that is the objective of the activities or programs
- target>academic: related to the academic group
- target>central_government: related to the central government such as ministries
- target>children: related to children
- target>community: related to the community
- target>corporates: related to corporates
- target>international_org: related to international organizations, such as the UN and international NGOs
- target>local_government: related to local government at provincial, municipal and district levels
- target>parents: related to the parents
- target>public: related to the public
- target>teachers: related to teachers
- target>youth: related to youth
- teacher_workload: related to the workload of teachers

- TEI: related to the Thailand Environment Institute, a non-profit, non-governmental, environmental organization focusing on environmental issues. Advocates a participatory approach to shared environmental responsibility.
- terminology: related to the terminology used
- TGO: related to the Thailand Greenhouse Gas Management Organization, an autonomous public organization seeking to facilitate greenhouse gas emission reduction in Thailand
- tourism: related to tourism operations
- transportation: related to the action of transporting someone or something
- trend: related to the general direction in which something is changing
- value: related to the regard that something is held to deserve; the importance, worth or usefulness of something
- value>natural_resources: related to the regard that natural resources are held to deserve; the importance, worth or usefulness of natural resources
- view_youth: related to the view of youth held by the individual or organization
- view_youth>empower: related to the view of youth held by the individual or organization that youth need to be empowered
- view_youth>future_leaders: related to the view of youth held by the individual or organization that youth are future leaders
- view_youth>next_generation: related to the view of youth held by the individual or organization that youth are the next generation
- volunteer: related to a person who freely offers to take part in an enterprise or undertake a task
- volunteerism: related to the use or involvement of volunteer labor, especially community service
- waste: related to material that is not wanted; the unusable remains or byproducts
- waste_separation: related to the process by which waste is separated into different elements
- weather: related to the state of the atmosphere at a place and time
- wildlife: related to wild animals; the native fauna of a region
- yes_department: organizations that do have a department specifically for youth.
- youth>characteristics: related to the characteristics of youth

- youth>club: related to youth clubs
- youth>secondary: related to youth in secondary school
- youth>tertiary: related to youth in tertiary education, i.e. university
- youth>working: related to youth who are working
- youth>youth_development: related to the process of growing up and developing capacities in positive ways
- youth_action: related to youth taking action
- youth_agency: related to youth feel capable of acting
- youth_comments: related to the additional comments made by youth
- youth_decisionmaking: related to youth being involved in decision-making processes
- youth_focus: related to organizations and activities that focus on youth
- youth_generated_questions: related to questions generated by youth
- youth_interest: related to the interests of youth
- youth_issues: related to issues concerning youth
- youth_participation>civic_org: related to youth participation in civic organizations
- youth_participation>community_service: related to youth participation in community service
- youth_participation>voting: related to youth participation in voting

CHULALONGKORN UNIVERSITY

VITA

Miss Joanne Narae Narksompong was born in Long Beach, California, USA on 14 November 1980. She attended New River Elementary School and Corvallis Middle School in Norwalk, California, USA. She received her high school diploma from the International School of Bangkok in 1998. In 2002, she graduated magna cum laude with a Bachelor of Science in Biology from the University of California, Riverside, USA. In 2003, she completed her Master of Education and Teaching Credential in Biological Sciences from the University of California, Riverside, USA. Miss Narksompong worked as a science teacher in San Bernardino City Unified School District in California and Na Daroon School in Bangkok, Thailand. In 2010, she received her Master of Business Administration with a concentration in global entrepreneurship from Thammasat University in Bangkok, Thailand.

Since 2012, Miss Narksompong has been pursuing her doctoral degree in the Environment, Development and Sustainability (EDS) Program at Chulalongkorn University in Bangkok, Thailand. Her research interests focus on youth agency and participation in climate change and sustainable development. During her studies, she received a research grant from the Graduate School of Chulalongkorn University and a tuition scholarship from the Environment, Development and Sustainability Program.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University