

What Do the Drawings Tell Us? Bhutanese Secondary School Students' Perceptions about Gross National Happiness and Sustainable Development

Päivi Ahonen, Eila Jeronen & Riitta-Liisa Korkeamäki

1. Introduction

This article focuses on Bhutan's Gross National Happiness (GNH) development policy, sustainable development and education for sustainable development. The special focus of the article is to analyze the drawings of secondary school students about GNH and sustainable development. The concept of Gross National Happiness was first articulated in 1972 by Bhutan's fourth King, Jigme Singye Wangchuck. The king declared that "Gross National Happiness is more important than Gross National Product" (RGOB 1999: 10; Thinley 2007: 12–13). The King's announcement of the GNH concept brought Bhutan to the attention of the modern world. GNH thus presents an alternative to Gross National Product (GNP) as a measure of development. His Majesty Jigme Khesar Namgyel Wangchuck, Bhutan's present King, clarified: "GNH acts as a national conscience guiding us towards making wise decisions for a better future" and that it will be "the key to Bhutan's success in maintaining our unity, harmony and character as a nation" (Royal Education Council, REC 2012: 5).

After the first parliamentary elections in 2008, Bhutan moved into the era of democratic constitutional monarchy. The government formed after the elections started to promote effectively the GNH as an alternative development paradigm. The GNH development policy was also shared with the global community. Among other things, the GNH model emphasized "ecological sustainability, fair distribution, and the efficient use of resources", and a "healthy balance among thriving natural, human, social, cultural, and built assets" (RGOB 2012: 68). The infusion of GNH values into the education system started in 2010. The then Prime Minister Jigme Y. Thinley promoted the goals of educating for GNH and emphasized the need to nurture "graduates who are genuine human beings ... ecologically literate ... contemplative as well as analytical in their understanding of the world ... free of greed and without excessive desires" and who know, understand, and appreciate "completely that they are not separated from the natural world and others" (RGOB 2013: x).

The happiness of the people of Bhutan has been measured twice since the active implementation of the GNH development policy. Practical and measurable indicators were developed to measure 72 GNH variables connected to nine GNH domains. The first national level measurement took place in 2010 and the second in 2015. The main findings of the 2015 survey indicate that material well-being is seen as important, but it is also important to enjoy sufficient well-being related to community, culture, governance, knowledge and wisdom, health, spirituality, psychological welfare, a balanced use of time, and harmony with the environment. The survey covers differences in the happiness levels between men and women, different parts of the country, different

occupational groups and people's levels of education (<http://www.grossnational-happiness.com/> 10.1.2016).

Bhutan is the only country in the world that implements the GNH development policy as an alternative to GNP as a measure of development. The study clarifies also why Bhutan's GNH policy has attracted global interest and Bhutan was invited and has actively participated in the process of developing the UN post Millennium Development Goals. Report of Happiness: Towards a New Development Paradigm (RGOB 2013) was sent to the UN Sustainable Development Goals preparation process.

For implementation of GNH in education the Ministry of Education developed the Educating for Gross National Happiness Training Manual that provides orientation to the principals and teachers of various educational institutions for developing GNH-focused education in different subjects. The school principals were trained first and the implementation at schools started in 2010. The adult population attended the national level happiness measurement. Because children and young people are important for the nation's future, it is important to learn how they understand GNH and its principles. In this study, we were interested in Bhutanese students' perceptions about the GNH national development policy and sustainable development.

2. Theoretical Background

For increasing the understanding of Bhutan's GNH development policy in the global context, the first section of GNH and Sustainable Development describes the connections of the GNH policy with the global sustainable development research results. The second section, which is about education for sustainable development, gives background on global efforts to increase education for sustainable development since the early 70s. Recent studies and the UN activities in the field are well connected with Bhutan's GNH principles. The contents of the chapter on Educating for GNH Training Manual clarifies how Bhutanese teachers have been trained to introduce GNH principles and practices, related to the Bhutan's GNH development policy into all subjects.

2.1 GNH and Sustainable Development

Bhutan's GNH development framework consists of four pillars and nine domains which are considered vital for creating the conditions for human wellbeing and happiness. The four pillars are sustainable and equitable socioeconomic development, conservation of the environment, preservation and promotion of culture, and good governance. The nine domains consist of psychological well-being, standard of living, good governance, health, education, community vitality, cultural diversity and resilience, time use, and ecological diversity and resilience (RGOB 2013; Ura et al. 2012: 9–10).

The survey concerning the happiness of Bhutanese people in 2015 included 72 GNH variables connected to nine domains. University graduates ($N = 66$) were trained to act as interviewers. The interviews were conducted in 10 dialects, in urban and rural areas of all districts, i.e., the people with no formal schooling and with postgraduate degrees, students and farmers, grandparents and traders, and corporate workers and government employees. The results show that a total of 91.2% of Bhutanese were narrowly, extensively, or deeply happy and 43.4% were extensively or deeply happy (RGOB 2011: 2; Tobgay 2015). The aim of the Government is that all Bhutanese should be extensively or deeply happy (<http://www.grossnationalhappiness.com/> 15.12.2015).

Sustainable development is related with Bhutan's GNH development policy to one of the four pillars, Sustainable and Equitable Socio-Economic Development, and to one of the GNH nine domains, titled Ecological diversity and resilience. The domain contains indicators such as eco-friendly behaviors, ecological knowledge, waste disposal and soil degradation (RGOB 2011: 6). The Educating for GNH Training Manual covers environmental wellbeing in Unit Four, Broader Learning Environment. The Minister of Education Thakur Singh Powdyel gives guidance to educators in the form of the principle "We want our children to learn that culture is the cultivation of sweetness and light, and that environment is an extension of our own self" (RGOB MOE 2013: 46). Environmental responsibility is one of the indicators of the Ecological diversity and resilience domain. This indicator aims to measure the feelings of personal responsibility towards the environment (Ura, Alkire, Zangmo & Wangdi 2012: 166). Having the right attitude towards the environment is a fundamentally important and widely discussed topic in Bhutan. Bhutanese people are proud of the 72% forest coverage, with 26% of it turned into protected areas (Thinley 2007: 8).

At the international level, the concept of sustainable development came to the attention of the world when it was introduced at the meeting of the World Commission on Environment and Development (WCED) in 1987. According to the WCED Brundtland Report (1987) when "sustainable development" is discussed, we should understand the concept to meet the needs of present generations as well as the needs of future generations (Nath, Hens, & Devuyt 1996: 138). The report and the definition of the concept contributed to the widespread approval and popularity of the concept. Later on, the "sustainable development" concept was diplomatically embraced at the Earth summit in 1992 and, as a consequence, "...sustainable development has become the 'guide star' of international efforts to reconcile economic and ecological imperatives" (Mazmanian & Kraft 2009: 36). However, in spite of the ongoing public discussion, according to many scholars, there is up to now no general agreement on what "sustainable development" really should be and how it can be attained in the global development policy context (Schubert & Störmer 2007: 2). At the beginning of the discussion about sustainable development there was a conflicting relationship between economy and ecology, implying the definition of social welfare. The social dimension was added as a "third pillar" to be considered in long-term sustainability related development policies, programs, and projects (Schubert & Störmer 2007: 3). The discussion has also analyzed the qualities of sustainable communities. According to Hempel (2009), the sustainable communities have levels of pollution, consumption, and population size which meet the community carrying capacity and their members share an ethical responsibility to one another and to future generations (Mazmanian & Kraft 2009: 37).

One visible source of sustainable community mobilization has been environmental activism. For encouraging people to think carefully about the social and economic needs of a community, the environmentalists embraced the slogan "think globally, act locally" already in the 1980s (Mazmanian & Kraft 2009: 40–41). Another leading approach for developing and applying sustainability indicators is "ecological footprint" analyses, developed by Wackernagel and Rees (1996), which is a measure of the load placed on the biosphere by a given population (Mazmanian & Kraft 2009: 51). Scholars and developers ask what exactly is it that we want to sustain. Are they human health and well-being? Or the so-called "three Es" of sustainability: environmental resilience,

economic vitality, and social equity (Mazmanian & Kraft 2009: 33)? The discussion on sustainable development has also been dealing with the cultural differences on how to deal with nature and the limits of human activities in nature. The emphasis on culture means that cultural specifics must be taken into account in a resource system when sustainability is sought along with the ecological, economic and equity dimensions (Nath et al. 1996: 151). Schutz completes his article entitled “What has sustainability to do with ethics?”: “If the achievement of sustainability is our goal—and it is—then the ‘age of greed’ will have to give way to an egalitarian attitude” (Nath et al. 1996: 152).

Hempel (2009) analyzed the process of sustainability community integration tensions between the objects. The “three Es” notion of sustainability—environment, economy, and equity—have conflicting goals in which the movement towards any “E” is met with resistance from supporters of one or both of the others. According to Hempel, perhaps the most obvious example is the tension between the goals of environmental quality and economic growth, typically viewed as finding a balance on how much pollution, waste, and natural resource consumption will be tolerated for the sake of economic expansion (Mazmanian & Kraft 2009: 41–42). The next section provides the background to education for sustainable development, which will connect Bhutan's GNH policy-related education principles and global sustainability education efforts.

2.2 Education for Sustainable Development

Discussion about education for sustainability has been ongoing for as long as there has been discussion about the concept of sustainable development. Discussion is needed in order to encourage global, nature-respecting ways of life, and suggest ways in which policy makers might improve strategies for education for sustainability at all levels, from local to global. Education helps to reflect realistic alternatives and understanding of how modernity has changed the way we use and think about nature (Huckle & Sterling 2001).

The UN Conference on the Human Environment of 1972 increased the interest in global sustainable development and education for sustainability efforts. One of the conclusions of the United Nations Conference on Environment and Development in 1992 in Rio de Janeiro, Brazil, was that education is crucial for promoting sustainable development (UNCED 1992: 13). According to Stephen Sterling, during the second Earth summit in 2002, thirty years later, education practices have not changed much towards sustainability. He also pointed out that sustainable education is nothing new, since many indigenous people have been practicing forms of sustainable education in their own context over thousands of years (Sterling 2001: 21–22). The lack of consensus as to what constitutes education for sustainable development (ESD) can be partly explained by the complex, contested, and constantly evolving nature of this concept (Landorf et al. 2008).

MacLeod (1992) has analyzed the values connected to ecologically sustainable development that should be reflected in education. Among the values are, for example, conserving biodiversity and ecological integrity, ensuring social equity, limiting natural resource use, and community participation. Also, Meadows et al. (1992) emphasized sustainability, efficiency, sufficiency, justice, equity, and community as high social values. Huckle & Sterling (2001: 34–35) made the important observation that the implementation of these values will be meaningful depending on the locality.

The examples of the UN's activities and research on ecologically sustainable development show that attention to sustainable education has been given for decades. GNH and environmental education have been part of the Bhutanese school education system in many ways, even before the systematic training of teachers started with the support of the Educating for GNH Training Manual. The contents of the GNH training manual are reviewed and discussed in the next section. The students of this study have also been part of the "Green School" program since 2010. This program refers to school design including education for sustainability, environment-based education, need for nature, modeling, and experiential learning (Drakpa & Rinchen 2013: 315).

The recent study (Brazier 2015) in the UK introducing students' proposals to improve sustainable development awareness and activities has similarities with activities carried out in Bhutan's schools. Bhutanese students have adopted the nearby mountains and rivers with the purpose of following up the environmental development of the adopted areas. The UK students proposed following steps to improve sustainability education: 1) Sustainability Week or a sustainability short course for giving a holistic overview of sustainability; 2) Aspects of sustainability, including real-world examples in all subjects; 3) Interactive learning tools; 4) Training and support to teachers to improve understanding and ability to teach sustainability; and 5) Extra-curricular sustainability activities. These steps and feedback between politicians, the public, industry, students, and educators will ensure that students understand sustainability and develop critical ways of thinking, leading to a more engaged generation (Brazier 2015, Abstract).

2.3 Contents of the Educating for GNH Training Manual

Most of the Bhutanese teachers have been trained on how to include the GNH principles cross cuttingly into the teaching of all the subjects. The Ministry of Education of Bhutan prepared a Training Manual for Educating for GNH program in cooperation with the representatives of six principals of different school levels, three officers from the Ministry of Education, and six Education Researchers and Consultants from the Institute for Management Studies. The GNH Guide was used by the Ministry of Education when training the principals and teachers before the training manual was issued.

The Training Manual for Educating for GNH includes six units guiding teachers in developing GNH-focused education. The first unit, "I Contextualizing Education for GNH", gives conceptual constructs of the four pillars, the nine domains and the indicators on how to include GNH principles into the teaching of different subjects at schools. All four pillars and nine domains are introduced in detail. The second and fifth units, "II Meditation and Mind Training and V Holistic Assessment", are pedagogically focused tools for developing concentration capacity and different assessment methods. The focus of the third and fourth units, "III Infusing GNH into the School Curriculum" and "IV Broader Learning Environment", give teachers the tools to design lessons for different subjects in and outside classrooms according to GNH values and principles. The sixth unit, "VI Critical Thinking and Media Literacy", emphasizes students' rights to exact and correct information.

The training material package was in use at some schools since 2010 and it was officially published in 2013 (RGOB MOE 2013). The study of Bhutanese Teachers' Perceptions about GNH in Education for Sustainable Development showed that teachers

are well oriented to new teaching and learning methods, and that they are encouraged to use the new teaching methods in their classroom practice. Teachers also reported the use of innovative teaching methods, which promote student-centered learning (Ahonen et al. 2013: 71-72). The contents of the training manual and teacher training introduce the background, history, and values of the way of life in Bhutan related to GNH principles and practices. Especially the first unit, Contextualizing Education for GNH, has the aim of “developing the students’ appreciation and understanding of the philosophy of GNH” (Educating for Gross National Happiness, A Training Manual 2013: XVI).

3. Purpose of the Research

The purpose of this study is to understand how Bhutanese secondary school students perceive Bhutan’s GNH principles and sustainable development. GNH principles are widely known according to the four pillars, so the contents of the four pillars have been used in analyzing the student’s drawings and writings. Analyses will show how both GNH and sustainable development have been taught at schools. The GNH-methodical teaching has been part of the school education only for short time, but GNH has been implemented in Bhutan since the 1970s.

Choosing the topics of the drawings and the images are analyzed as students’ immediate expression about GNH and sustainable development, and the drawings are categorized into four pillars accordingly. The writings in the drawings will move on showing students’ experiences and thinking about GNH and sustainable development. The contents of students’ perceptions about the three conflicting goals of sustainable development—environment, economy, and equity—will be analyzed with examples of students’ drawings and writings.

The key questions of the study

1. How do the Bhutanese secondary school students perceive Bhutan’s GNH development policy and sustainable development?
2. What kinds of connections are there between students’ perceptions with three conflicting goals of sustainable development: environment, economy, and equity?

4. Methodological Approach

Images seem to speak to the eye, but they are really addressed to the mind. They are ways of thinking in the guise of ways of seeing. The eye can sometimes be satisfied with the form alone, but the mind can only be satisfied with meaning, which can be contemplated more after the eye is closed (Freeman & Mathison 2009: 109).

This study explores the contents of the Bhutanese secondary school students’ drawings in relation to the Gross National Happiness and sustainable development. The purpose of the study is to understand perceptions of students about GNH and sustainable development. Students’ perceptions are unfolded through their drawings and explanations about the contents of the drawings. The second key question is to find connections between these perceptions with the global concepts and theories of sustainable development, especially focusing on three conflicting goals of sustainable development.

Teachers at the schools that were part of this study were given guidance and training by the Ministry of Education on how to teach different subjects enriched by GNH values and principles in different stages. The GNH training began in 2010 by the respective school principals. This was preceded by training of all the school principals at a national level workshop. The principals then trained their own school teachers, following a cascading model of professional development. Later, after 2011, teachers were also trained in national level workshops, because the school level training provided to the teachers by their principals did not adequately prepare the teachers to infuse GNH values and principles (Sherab 2013).

The students' drawings and explanations were analyzed and observed using back and forth movements between data, theories, and focus of the study. The methodology, which was developed during the analyses process, followed Freeman and Mathison's (2009: 112, 154) inductive analysis principles to work from specific instances to theoretical connections and explanations. The model for the methodology evolved following the above inductive analysis principles, while analyzing the students' drawings and writings, background theories, and research questions. While reviewing the students' drawings and writings the themes which appeared most often represented beautiful nature, well growing trees, clean rivers, and Bhutanese people in their national dress. These themes represented very clearly the principles of Gross National Happiness development policy and brought to the first author's mind the background, history, and connections of GNH with sustainable development. The tensions between the three sustainable development goals of environment, economy, and equity (Hempel in Mazmanian & Kraft 2009: 41–42) were used in developing the three focus areas (FIG. 1). Three Focus areas were analyzed as part of the research findings: Students' reflections on GNH pillars, Tensions between Environment, Economy, Equity conflicting sustainable development goals and Global and Local perspectives of the drawing items.

4.1 The Participants and the Material

The Department of School Education in the Ministry of Education of Bhutan approved the proposal requested in the format of the Authorization Letter by the supervisor of the research, the Dean of the Faculty of Education of the University of Oulu. The approval decision to gather the material for the research was forwarded from the Ministry of Education to the principals of the three secondary schools. All three schools were located in Paro, one of the major towns of Bhutan. The principals selected the classes in their own schools to represent the Bhutanese students in this study. In total, 124 students participated voluntarily in the study (32 students in the 11th grade class A, 31 in the 11th grade class B, 29 in grade 8 and 32 in grade 7). Half of the students were boys and half of them were girls.

The material was created and gathered during the lessons of about 40 minutes. At the beginning, the participants received the following information about the study: "the aim of this study is to understand, describe, and discover the core essence and principles of the GNH development policy and practices of Bhutan in the context of sustainable development and education for sustainable development." After that the pupils were asked to draw a picture or pictures describing, according to their understanding, the GNH principles and sustainable development. They were guided to include the names of the drawings on a piece of A4 paper and, if they so wished, write about their drawing.

The students were also advised to ask questions if needed, and some students raised their hands. They asked if it would be possible to discuss in a small group the topic, and it was agreed that discussing in small groups of two to three students is possible. Those who decided to work in the groups were sitting next to each other already and seemed to be friendly with one another. Most of the students worked individually. It was agreed with principals that it is better that the class teachers are not in the classroom during the data collection, to allow students to feel freer to express themselves. In Bhutan, teaching is given mostly in the English language, so there was no need for an interpreter in the classrooms. The first author as a facilitator of the drawing process moved around the class giving new colors to students if they wanted to change the colors they had picked up from the table at the front. Very few students asked specific questions while moving in the class. The questions were related to practical and logistical arrangements of the information gathering, such as the exact timing. There were no questions related to the topic of drawing.

4.2 GNH Perceptions of Happiness and Sustainable Development in Student's Drawings and Writings

The students' drawings and writings explaining the contents of the drawings were analyzed with a mixed methods approach, starting with the qualitative method approach, whereby the analysis is done at each step of the research process (Miles & Huberman 1994). The first analysis phase contained unfolding and clarifying the important items of the drawings about GNH and sustainable development. The process followed the method of qualitative inductive content analysis, which can be defined as a process of continuous reading through the data and looking for emerging, important themes answering the key research questions (Tashakkori & Teddlie 2003, Creswell 2003). The first author studied and assessed the students' drawings and writings and came to the conclusion that the drawings contained regularly the themes of the GNH four pillars. The GNH pillars and the nine domains connected with each pillar represent:

1. Sustainable and Equitable Socioeconomic Development, including Standard of Living, Health and Education;
2. Conservation of Environment, focusing on Ecological Literacy;
3. Preservation and Promotion of Culture divided by Time Use, Psychological Well-being, Community Vitality, Cultural Diversity;
4. Good Governance connected with domain Good Governance (RGOB MOE 2013, A Guide to Advancing Gross National Happiness 2011: 2; Educating for Gross National Happiness: 9).

The analysis then changed from using the qualitative method to the quantitative approach. During the second phase of the analysis the drawings were categorized into four GNH pillars and the analysis is described as quantitative content analysis. The 124 drawings and explanatory writings were divided, in relation to the contents of the drawing, into the four GNH pillars, which are the key policy statements of the GNH principles. The second and third authors confirmed the credibility of the analysis methods. The four GNH pillars form the most important foundation of the GNH development policy.

After the careful appraisal of the contents, titles, and the written explanations of the drawings, the GNH pillar representing closest the content of a drawing was identified. The drawings, with the titles and texts of 124 students, contained 288 items connected with the contents of the GNH pillars. The 288 items of the drawings were categorized into the GNH pillars.

The analysis continued by reviewing the contents of the explanations students gave for their drawings and by reflecting on the contents of the GNH pillars as part of the GNH philosophy. The study process drew conclusions and results related to the key questions of the study; students' perceptions about the GNH development policy, about the four sustainable development focuses, and about three competing, sustainable development conflicting goals. When comparing the contents of the drawings and the texts explaining the contents of the drawings, the analysis process moved forward from analyzing students' immediate expression of choosing the topic, to the analysis of the students' thinking. The process of exploring and analyzing written explanations followed mainly inductive content analysis.

4.2.1 Qualitative Case Study

This case study involves students of three schools in the town of Paro. Students (N=124) of three grades participated voluntarily in the study: 63 students from the 11th grade, 29 from grade 8, and 32 from grade 7. Half of the students were boys and half of them were girls. The case study provides in-depth understanding about the students' views and perceptions of Bhutan's GNH development policy and sustainable development.

According to Creswell (2007), the case study is a good approach when the inquirer has a clearly identifiable case with boundaries and the study seeks to provide an in-depth understanding about the case. Bhutan's GNH development philosophy is deeply rooted in the culture of Bhutan and therefore well identifiable. In the final interpretive phase, the researcher reports the meaning and learning about the issues of the case. The discussion and interpretive parts of this study provide conclusions on how students' drawings and writings are related with key questions and the three focus areas of the study. The conclusion part includes recommendations for further research areas of sustainable development education (Creswell 2007: 74–76). In-depth understanding of the GNH policy connected with education will provide more detailed information to educators in Bhutan and to the interested global community for the implementation of education for sustainable development.

4.2.2 Qualitative Content Analyses with Quantitative Features

Content analysis was appraised as the most appropriate qualitative method for this study in the analysis of both drawings and writings of the students. Content analysis was seen as most relevant because it is a research technique used to make valid inferences by interpreting textual material. According to Bazely (in Tashakkori & Teddlie 2003: 705), the content analyses refers to a method of data analyses for narrative data—drawings and texts in the drawings—in which the segments of the text are systematically categorized. In this case study, the drawings and writings of the students were first carefully reviewed in general by observing and looking by the first author, who has been studying Bhutan's development and GNH development policy. The first inductive review of the drawings revealed that all the drawings were in one way or another

connected with the GNH four pillars, representing the structure of Bhutan's GNH policy, linking up with the GNH conceptual framework and content of the four GNH pillars. After the first observation, the research material of 124 pupils' drawings and writings showed 288 GNH pillar connected items, which were categorized into four different GNH pillars. The analyses then moved to the next stage analyzing the items of the drawings in the context of three conflicting goals of sustainable development. Examples of students' writings on conflicting sustainable development goals for further analyses of the drawings are given in TABLE 4.

The content analyses of this study focused on analyzing similarities and differences between the students' drawings and explanations of the drawings. Choosing the topic of the drawing can be viewed as immediate experience of the task given to the students. According to the analysis method, explanations given to the drawing on a piece of A4 paper represent the thinking of the students. Immediate experience thinking of students paves the way to conclusions and results related to the key questions of this study. Students were fast in choosing the theme of the drawing they wanted to draw. The fast reaction showed, according to the facilitator, the students' interest in the topic they were given. When looking at the contents of the drawings, the first impression was that all the drawings are strongly focused on the environmental values and culture of Bhutan. When analyzing drawings and the explanations related to the drawings in parallel, the students' thinking on GNH and sustainable development was broadened. The students also took time when writing and thinking after they had drawn the image or images of GNH and sustainable development.

4.3 Expressive Drawings as Visual Data

Drawing is not imitating or copying a physical world, but rather synthesizing life experiences. Art then becomes the means through which young people can communicate about phenomena which are complex to describe verbally, but which are being perceived and integrated into their reality (Hunleth 2011).

Bhutanese students created drawings related to their life experiences: clean rivers, high mountains, national dress, planting trees and not cutting them down, and electric cars not fuel cars. The students did not need to explain at the beginning verbally the meaning of their drawing. They just happily created the figures and used many colors. The logic of analyzing the GNH drawings of the Bhutanese young people in this study represent well the views of Ruth Leitch on how to use children's drawings as research data:

The incorporation of drawings in research is commonly associated with small-scale ethnographic studies in which the express purpose is to sustain engagement with young people in order to ascertain in-depth understanding of their experiences in particular phenomena (Thomson 2008: 39).

When a paper and colored pen is put in front of you, the imagination wakes up and, as Leitch points out, the drawing will unveil the drawer's deepest experience of the phenomena. The students in Bhutan were clearly enthusiastic about drawing, they enjoyed planning the image they wished to draw, and wrote fairly long explanations about what they wished to express with their drawings. The imagination was clearly

woken up when one student drew the pictures of the national festival entertaining figures and another student drew a globe which was held by five hands.

Leitch gives the following guidelines for researchers on how to use children's images sensitively: place the child/young person at the center as the "expert" on their own worlds, engage children's and young people's creative tendencies, and provide opportunities for a more participatory democratic research process that holds the potential for change and transformation (Thomson 2008: 51).

As the facilitator of the material collecting process, the first author encouraged students with colored pens, answered their questions and invited students to work in small groups. These activities supported children to open their imaginations. Some of the students decided to create drawings about GNH, some students drew about sustainable development, and many of the drawings were mixed with both concepts.

5. Findings of the Study

The findings are presented according to the three Focus areas presented in FIG. 1.

1. Students' reflections on the GNH pillars
2. Tensions between the sustainable development goals of Environment, Economy, Equity
3. Global and Local Sustainable development perspectives

As an answer to the first research question, the division of students' drawings into four GNH pillars, based on the drawing items and names of the drawings, will be presented first. This phase can be viewed as showing the immediate experience of the students on the drawing topic. Examples of the students' drawings illustrate the main items and mixture of the items of the drawings. The presentation of the findings will continue in analyzing the students' writing according to focus areas two and three, related with sustainable development, the second research question. The findings will be gathered from the students' drawings as well as the writings, immediate experiences, and the contents of the drawings.

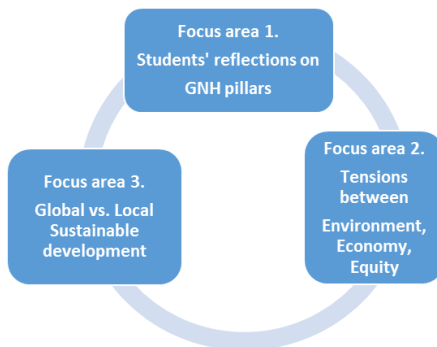


FIG 1
GNH and sustainable development Focus Areas (Hempel 2009)

5.1 Immediate experiences – choosing the topic for drawing

The items which students chose to draw most often illustrate trees being planted next to trees being cut. (TABLE 1). As often as “plant trees don’t cut” the students liked to draw snow covered mountains, rivers, and green forests with beautifully growing trees. These drawings are categorized according to the GNH pillars 1 and 2, Sustainable and Equitable Socio-Economic Development and Conservation of the Environment, depending on the focus of the drawing. The second favorite items were drawings of Bhutanese men and women in their national dress *Gho* and *Kira* and the scarfs *Rachu* and *Kabney*, needed as part of the official dress code. These drawings are categorized into pillar 3, Preservation and Promotion of Culture.

The drawings of the students are categorized in TABLE 2 according to the four pillars and the class the students are studying. The names of the schools are not mentioned in the analyses in order to maintain confidentiality. When categorizing the drawings into the GNH pillars, some of the students have been marked into two or three pillars, depending on the contents of the drawing. Students (N=124) expressed 288 different visual items in their drawings related to GNH and sustainable development. The students’ drawings including the names of the drawing and the explanation were divided into four pillars according to the contents of the drawings as follows:

Pillar 1. Sustainable and Equitable Socio-Economic Development 92,

Pillar 2. Conservation of the Environment 79,

Pillar 3. Preservation and Promotion of Culture 71, and

Pillar 4. Good Governance 46 (TABLE 2).

Items of the drawings	Number of drawings	Connection with pillars
1 Not cutting but planting trees	35	1 & 2
2 Clean mountains, rivers, and green forests	30	1 & 2
3 Men and women dressed in national dress	35	3
4 Cars using electricity not fuel	15	1, 2
5 Picking up waste and not littering	15	1 & 2

TABLE 1
The common items of the students’ drawings

The first two pillars are the most popular, the third is also popular, and the fourth was chosen less often. The different items appeared in the drawings 288 times, which means that many students discovered several items for their drawings. The division of the drawings and texts into pillars is fairly equal in the different grades. The main difference between the grades is that the lower classes found fewer items related to GNH Pillar 4 than the higher grades. Possible explanations, based on this study, for high numbers of drawing items related to the first three pillars can be: 1) the contents of the first three pillars, related to the drawing topic; 2) the outdoor focused teaching methods of the schools; and 3) the traditional way of life in Bhutan.

Pillar 4 got the lowest number of drawing items. Drawings categorized to Pillar 4 contain the different ways of picturing GNH in general. One student wrote “We believe in GNH” and drew hospitals, schools, and trees. Another student drew a picture of a flower with leaves of 4 GNH pillars.

Division of the drawing items according to the contents of GNH four pillars	Pillar 1. Sustainable and Equitable Socio-Economic Development	Pillar 2. Conservation of Environment	Pillar 3. Preservation and Promotion of Culture	Pillar 4. Good Governance
Grade 11 class 1 32 pupils	22	24	12	12
Grade 11 class 2 31 pupils	21	17	21	24
Grade 8 29 pupils	23	10	12	4
Grade 7 32 pupils	26	28	26	6
288 items on pillars	92	79	71	46

TABLE 2
Drawings categorized according to the four GNH pillars

5.2 Examples of Popular Topics

Selected drawings with the texts illustrate the focus of the contents of the students' drawings. The most common perceptions and values about GNH development policy and sustainable development are shown in the drawings as selected examples.

5.2.1 Key Pillars:

Sustainable and Equitable Socio-Economic Development and Conservation of the Environment

Drawing 1 presents the most common structure of the drawings categorized into the two key pillars. Students drew several items and themes on paper about a clean and healthy

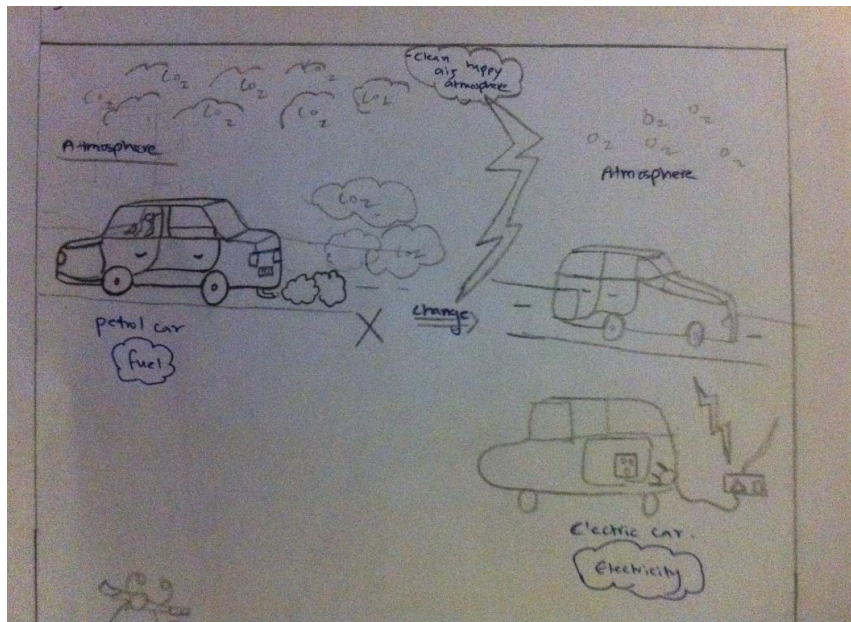
nature and people looking after the forests or fields. These themes appeared in 65 drawings. Cleaning up nature was also well represented, appearing in the drawings of 15 students. Many schools have followed the practice of classes deciding to adopt a nearby river or mountain for students to learn about nature. Through this method pupils learn about the conditions and changes of the adopted part of nature, find out information from the people living in the area and share it with other classes at the schools. This teaching/learning practice is part of the Broader Learning Environment introduced in the Educating for GNH training manual.



DRAWING 1
Caring nature, caring animals

A common theme in the pictures was the systematic change from fuel cars to electric cars as in DRAWING 2. Fifteen students drew a picture categorized into GNH pillars 1 or 2, with titles “cars using electricity, not fuel.” The change from fuel to electric cars has been discussed widely in Bhutan and the government supports actively the use of electric cars. Discussion in the media has highlighted the benefits of electric cars. Bhutan’s zero emissions target expressed in 2014 requires sustainable and environmentally friendly zero emission transport. The Government aims to provide first all civil servants with electric cars, eventually changing all vehicles to electric.

The theme of DRAWING 3 was also a very common theme. The drawing titled “Not cutting, but planting trees” appeared in 35 drawings out of 124 pupils’ drawings. The drawings in Fig 5 show that Bhutanese students see GNH strongly connected with the well-being of the environment and they value the high forest coverage of the country. Cutting down trees is seen as very harmful and planting trees as the responsibility of each and every Bhutanese. There have been campaigns against the cutting down of trees in Bhutan and students, adults, and government employees have attended tree planting days.



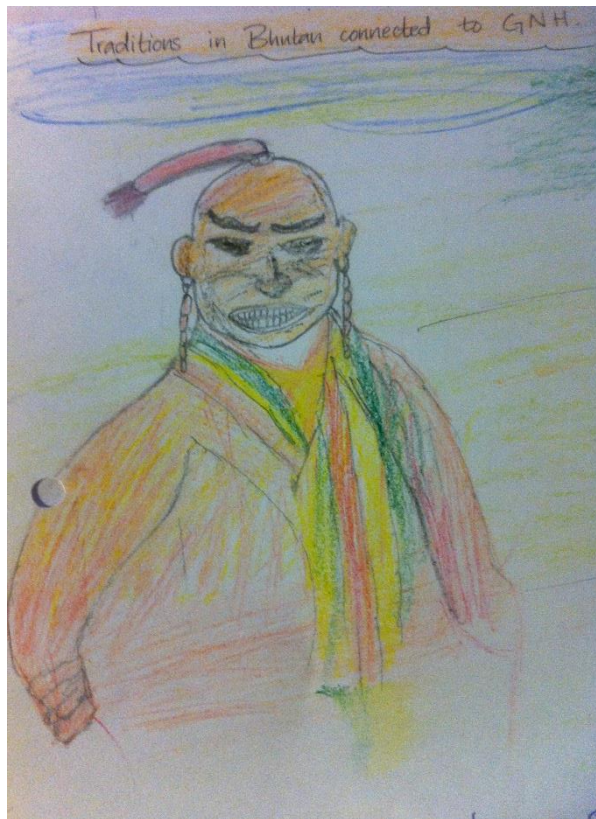
DRAWING 2
Electric cars instead of fuel cars



DRAWING 3
Not cutting, but planting trees.

5.2.2 Preservation and Promotion of Culture

While categorizing the drawings, the items belonging to the pillar Preservation and Promotion of Culture were discovered in the drawings of 71 students. Most of the drawings were pictures of the national dress of both men and women. This may be because according to Bhutanese traditions and regulations, government officials wear the national dress while performing government duties. Some pupils also drew pictures of traditional festivals, so they perceive traditions and festivals as closely associated with GNH. The schools organize possibilities for students to attend the festivals in the nearby monasteries. DRAWING 4 shows an image related to the traditional festivals. The drawer has written under the figure “*Atsara* the funny masked man, entertaining people during annual festival called *Tshechu*. It makes people laugh, making people happy, gradually fulfilling GNH”. *Tshechu* is the annual festival held in each district or *dzongkhag* of Bhutan at different times of the year in different districts. The *atsaras* are clown figures who entertain the crowds at *tshechus*. Their role is a significant part of the entertainment.



DRAWING 4
Funny mask man

Altogether 35 pupils decided to draw pictures of traditional national dress. The pictures illustrated both men and women in their national costumes. People use these costumes during festivals, in government offices, and also during family celebrations and gatherings. Children use the national dress during school days, so they grow into this tradition from a very young age. One student wrote about the meaning of traditional dress in her drawing:

Wearing traditional dress is connected to GNH because we can preserve our traditional dress or culture that we have inherited from our great leaders, Kings and people. We hope to do the same till the generations or in our futures. Our dresses, which are unique from other countries, signifies that we are pure Bhutanese and we preserve our culture and lastly our country will have 60% forest cover throughout.

DRAWING 5 illustrates a Bhutanese man and woman wearing national dress.



DRAWING 5

Woman and man wearing their traditional Bhutanese dress

5.3 Differences between Age Groups

Differences between the students studying in 7th, 8th and 11th grades are mainly connected with Pillar 4 Good Governance (TABLE 3). The 11th graders had more drawings and written observations about the good governance pillar than the 7th and 8th graders. The Good Governance drawings and writings were related to elections, environment, education, health, well-being, and happiness.

Students gave explanations in their drawings related to “Elections” in different grades. 11th graders mentioned the well-functioning National Assembly, successful elections, and the right to vote in all circumstances. 7th and 8th graders wrote elections, and being friendly to each other to make good government. In the area of “Environment” 11th graders clarified in their drawings, for example, government policy to use electric cars instead of fuel cars and reduce the number of industries to stop harming our green vegetation. 7–8th grades had no examples related with “Environment”. “Health and Education” were described by 11th graders as “educate people about sustainable development to save planet for future generations” and hospitals with good facilities. 7–8th graders wrote good health care. About “Well-being and Happiness” 11th graders wrote “the government provides facilities for its citizens and citizens use them wisely” and “helping the people of Bhutan with problems and difficulties to bring happiness of all kind”. For 7th and 8th graders, GNH Well-being and Happiness means not separating poor people and rich people.

The themes in the drawing of the pupils of different grades are close to each other. However, it seems that older students have been able to express themselves in a broader context by mentioning more areas and issues, which they consider as good governance. The analyses of the drawings showed that for younger pupils it was more common to draw the visible elements such as clean environment with mountains and rivers. The other common theme, especially among 7th grade students, was the drawing of people in their national dress. The older students drew images of schools, hospitals, and happy people. They wrote about successful elections, government policies, anticorruption, and people’s education in sustainable development to save the planet for future generations.

5.4 GNH and Sustainable Development in Students’ Writings

The presentation of findings in this section will analyze students’ writings according to focus areas two and three: tensions between sustainable development goals of environment, economy, and equity, and global and local perspectives of drawing items related to sustainable development.

TABLE 3 gives examples of the contents of the students’ drawings as expressed in their writings related to the four pillars. The texts in the drawings can be understood as representing students’ thinking after they had chosen the topic of a drawing. The writing is an explanation for choosing the topic of the drawing the student saw important. The drawings were created first fairly fast, and afterwards the images were carefully thought about for developing the writing.

5.4.1 Conflicting Sustainable Development Goals in Students’ Perceptions

In TABLE 4 there are examples of Bhutanese students’ writings related to the drawings with themes connected to the three conflicting sustainable development goals:

environment, economy, and equity. Some of the examples in the table clearly represent one sustainable development goal only. The focus of the table is to present writings which can be seen as sharing the contents of two different conflicting sustainable development goals. Some writing examples present economy as well as environment, and some both environment and equity items. The abbreviations before the writings are marked as: Environment ENV, Equity EQ, and Economy ECON.

The analyses of the students' drawings related to the three competing goals of sustainable development show that the well-being of the environment is the most important sustainable development goal of the Bhutanese students. The goals of equity and economy can both be reviewed as sustainable development goals when students write about the development of Bhutan with relation to good education, good health, equality between poor and rich, and fair and non-corrupt government. Students' outputs related to the fourth GNH pillar, good governance, highlight the importance of national elections, organized in Bhutan twice since 2008.

Sustainable development discussion in Bhutan is connected with the launch of the GNH policy and introducing the four GNH Pillars already in the early 1970s. Sustainable development is clearly the contents of the first three pillars in different ways. The first GNH pillar, sustainable and equitable socioeconomic development, is also connected with economic development and equity. The name of the pillar includes both an ethical approach and economic development. The economic development is discussed briefly in the Educating for GNH Training Manual focusing on global development:

The necessity of materialistic development is obvious from the scale of economic suffering faced by the majority of the global population. Economic growth is an absolute necessity to eradicate poverty. The indicators must not be biased towards consumption (RGOB MOE, 2013: 113).

Pillar 1. Sustainable and Equitable Socio- Economic Development	Pillar 2. Conservation of En- vironment	Pillar 3. Preservation and Promotion of Culture	Pillar 4. Good Governance
-Taking care of the animals -If the diseases cannot be treated, they can be helped by meditation	-Drawing of tree with branches carrying the names of the GNH four pillars -Preventing forest fires - Drawing of a globe hands around with the text " We have to join our hands together to save the world"	-National festivals where men are attending archery competitions -Mask dances played during the national festivals, e.g. Atsara -People are visiting the monasteries called dzongs	-Enjoying free education and health care -When GNH is there, poor and rich are the same

TABLE 3
Examples of students' writings in the drawings related to the four pillars

The drawings of the Bhutanese students did not have much coverage on economic issues and values. The well-being of the environment is clearly the most common item of the drawings.

Conflicting Sustainable Development Goals		
ENV Environment	EQ Equity	ECON Economy
ENV Clean mountains, rivers, and green forests ENV Not cutting but planting trees ENV, EQ Educate people about sustainable development to save the planet for future generations ENV, ECON Cars using electricity, not fuel ENV, EQ When nature is preserved and when animals and all the living beings are happy, GNH is there ECON, ENV Writing next to the drawing of a globe “We have to join our hands together to save the world” ECON, EQ Feels good to stay in this world. Good houses, good schools, good hospitals for all EQ National festivals, archery competitions, and mask dances played during the festivals ECON, EQ When GNH is there, poor and rich are the same ECON People not becoming selfish and money minded, treating all living things equally ECON Fair and non-corrupted government gives everyone free education and health care		

TABLE 4
Students’ writings on conflicting sustainable development goals

5.4.2 Global and Local Development

The students’ drawings were focusing mostly on the local sustainable development themes. DRAWING 6 is an example of the drawings, referring to global sustainable development and with planetary limits.

The student who created drawing is expressing the global environmental concern about sustainable development. Based on the instructions to draw about GNH and sustainable development, four students out of 124 have included global sustainable development into their drawings. These students created images of globe with texts reading: “No matter what is the distance, we are One”. GNH-sun sends light towards the globe in the drawing. In another drawing, the hands were holding the globe and the texts around the globe says, “We have to join our hands together”, “We should plant more trees” and “Contribute nature to Mother Earth”. As a conclusion, most of the drawings on GNH and sustainable development were focused on life and development in Bhutan, which is understandable, since the GNH is implemented in Bhutan only. The GNH principles, especially pillar 2, Conservation of Environment emphasizing ecological literacy, and pillar 1, Sustainable and Equitable Socioeconomic Development connected with standard of living, health and education can be seen globally important. GNH is however implemented only in Bhutan, so therefore it is meaningful, that the four students had a global view, when choosing the image for their drawing.



DRAWING 6
Our Earth

6. Discussion

The discussion section deals with the three focus areas connected to GNH and sustainable development, related to the theoretical background, generalizations, and explanations about GNH and sustainable development. The focus areas cover students' reflections on the four GNH pillars, tensions between the sustainable development goals—environment, economy, and equity—and global and local perspectives. The most important finding of this study, based on the analysis of the drawings and related writings, is that secondary school students of the three Bhutanese schools are well aware of both the GNH structure and sustainable development principles. Students drew pictures connected with the four GNH pillars, which are the main foundation of the GNH development policy. Pillars 1 and 2 were in pupils' minds most often when they started to think about what kinds of images they would like to draw on GNH and sustainable development. Both the first pillar, "Sustainable and Equitable Socio-Economic Development", and pillar two, "Conservation of the Environment", are well connected with the drawing task. Both pillars are also very clearly connected with the basic principles of sustainable development. Environmental values and the protection of nature are seen as the most important areas of GNH and sustainable development. The findings clarify that sustainable development values connected with Bhutanese culture

have been supported by education. The main explanations for the findings, taken from the students' drawings and writings, are:

1. Bhutan's traditional value system and good introduction of GNH principles in education, and
2. Out of class, nature connected teaching methods of Bhutanese schools.

The study's second research question asks what kinds of connections exist between students' perceptions with the three conflicting goals of sustainable development—environment, economy, and equity. The findings based on the drawing items and writings show that environmental values are highly popular among the students, equity is well represented, and economy is less visible in the students' perceptions of GNH and sustainable development. The GNH development policy of Bhutan is regarded as an alternative development policy for the economic dominated Gross National Product (GNP), and this policy is successfully present in students' drawings. As an interesting finding, the authors also see connections between the drawings and writings about equity and economy with elections, organized in Bhutan twice since 2008. GNH-based development policy has been actively implemented in different administrative areas in Bhutan after the first elections in 2008. The international community has also shown interest in learning from Bhutan's GNH experiences because of increasing global environmental problems. The process of developing the UN Sustainable Development Goals introduced in November 2015 benefitted from the experiences of Bhutan's development policy. The international connections, including the UN, have been widely discussed in the media as well as in schools. The discussion may have strengthened the students' perceptions on positive GNH views.

Principles related to Good Governance, one of the four GNH pillars, is also taught cross cuttingly to pupils at schools in different subjects. The Educating for GNH Training Manual refers to pillar four in the Prologue entitled "GNH and Space for Mutual Illumination" by Thakur S. Powdyel, the former Minister for Education, who says: "When we talk of governance, we would like to begin from self-governance to governance in the family, in the class, in school, in organizations, in societies, at a national level and the link to world governance" (RGOB MOE, 2013, p. IX). The drawings items with writings chosen for the Good Governance pillar were often related to Bhutan's current democratic development. GNH and sustainable development was described as people's participation, a well-functioning National Assembly, the right to vote in all circumstances, fair and non-corrupted government, and leaders having the wisdom to guide in their own fields. Out of 124 students, four students addressed also global sustainable development in their drawings. The pupils drew images of a globe held by the hands of many people and wrote: "We have to join our hands together". The global approaches, connected with the first GNH pillar, Sustainable and Equitable Socio-Economic Development, were positive exceptions.

All Bhutanese teachers have been systematically trained to include GNH principles cross cuttingly in the teaching of different subjects at schools. The Ministry of Education invited the team of writers for compiling the Educating for GNH Training Manual, which gives guidance to teachers on pedagogical methods for developing the GNH focused education. It seems that the systematic training of teachers with the support of the Educating for GNH Training Manual, has influenced students' thinking

and perceptions of sustainable development and GNH. The Educating for GNH Training Manual gives a list of suggested community activities in Unit IV, The Broader Learning Environment. The unit recommends the students' participation in local farming, adopting forests and streams, cleaning campaigns, and participating in local festivals. The contents of students drawing items are strongly focused on the well-being of Bhutan's environment and nature. Increased out of school teaching methods of Bhutanese schools may have also affected students' thinking. The contents of the drawings about the festivals and archery competitions and people wearing traditional dress show that pupils also consider local traditions as very important parts of GNH and sustainable development. Out of 288 visual images, 71 students decided to draw on the topic of preservation and promotion of culture. Choosing the item shows that pupils have a strong connection with the culture and traditions of Bhutan. One of the important findings of the study is that the GNH training of teachers for taking education outside of classrooms and into nature has influenced students thinking and perceptions of sustainable development and GNH.

The main limitation of the study is that the student representatives were from three schools, all located in one of the main cities of Bhutan. The plan to move closer to rural areas to collect information from villages was not possible because of the risky road conditions during the rainy season.

7. Conclusions

The study focused on students' perceptions about GNH and sustainable development. When analyzing the results, the authors have been aware that the community values and cultural traditions are naturally present at school and in students' answers. One limitation of the research study is the fairly short introduction of the background to traditional Bhutanese values and principles. In the area of education one limitation is that GNH-focused education has been systematically implemented in Bhutan for a very short time—after all, teachers were trained starting in 2010.

A recommendation for educators focusing in their teaching on sustainable development is to bring the students close to nature as much as possible. Further research could clarify in more detail the “out of school” teaching practices of Bhutanese teachers for sharing the results at the global level. In finding out more information about perceptions of students concerning sustainable development, it would be important to plan further research on how the traditional value systems of communities in Bhutan and outside Bhutan are connected with the sustainable development values and policies. Students' perceptions will be useful for educators in developing GNH-based education in Bhutan, and educators outside Bhutan focusing on sustainable development education. In the context of environmental education and sustainable development, one of the primary aims of student-centered education is that students learn to take action on environmental concerns and become active citizens (Jensen & Schnack 1997). Relevant science education encompasses necessarily a societal dimension for developing scientific literacy in the students and preparing them for societal participation (Marks, Stuckey, Belova & Eilks 2014; Brazier 2015: 6).

The education authorities, principals, and teachers of the secondary schools in Bhutan will benefit from the results of the study when developing their education system further. The research results also serve the global community to find alternatives to the current unsustainable development which is causing worsening environmental

problems and climate change. Bhutan's efforts to lead the country through GNH values and principles have increased the interest of international researchers and UN Member States in Bhutan's more holistic development paradigm. In 2011, the UN General Assembly adopted resolution 65/309 "Happiness: towards a holistic approach to development" (UN 2012).

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