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# A Participatory Framework to Identify Gross National Happiness Issues for the Development of Smallholder Mixed Farming Systems in Bhutan

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## ABSTRACT

*This paper presents a participatory methodological framework to identify Gross National Happiness (GNH) issues at the smallholder level in Bhutan. GNH is a development paradigm of Bhutan that has increasingly drawn international attention. Its four pillars are sustainable and equitable socioeconomic development, preservation of the environment, preservation and promotion of culture, and promotion of good governance. Since GNH is usually discussed at the national level, its domains and indicators have been defined through a top-down intellectual exercise, with possibly limited relevance of the major issues for most rural Bhutanese, which represent 69 percent of the country's population. The methodology applied in this study was useful in identifying key GNH issues from a systems perspective at the smallholder level. Socioeconomic development and the environmental aspects were found to be the pertinent issues. The study also revealed trade-offs and dependencies among the four GNH pillars and their indicators. Inclusive policies are needed to address the concerns of smallholder farmers. If GNH is to work for the present and future generations, then it is essential to embrace the GNH issues of smallholder farmers who compose the backbone of the Bhutanese population. Further, the GNH concept is currently a mix of issues and indicators. Translating the issues identified by the study into indicators is required to properly evaluate the progress at the farm level and to support GNH policy development.*

**Keywords:** gross national happiness, Bhutan, smallholder farming

**JEL Classification:** D70, O2

## INTRODUCTION

The challenge in developing countries is to find the appropriate mix of policies and institutions that would maximize the benefits from globalization while addressing risks such as environmental degradation and effects on local cultures (Balisacan, Edillon, and Piza 2005). Bhutan has responded to globalization through the concept of Gross National Happiness (GNH), which seeks a path of development that considers Bhutanese society and culture (Planning Commission 2002). The concept has four pillars to achieve holistic development: (1) sustainable and equitable socioeconomic development, (2) preservation of the environment, (3) preservation of culture, and (4) promotion of good governance (Planning Commission 2002).

The fourth King of Bhutan initially conceived of GNH in the late 1980s (Ura and Galay 2004). The concept opposes conventional economics, which equates happiness and well-being to increasing material wealth and gross domestic product (GDP). In July 2011, the United Nations (UN) in a resolution adopted Bhutan's proposal of "happiness" and invited countries "to pursue the elaboration of additional measures that better capture the importance of the pursuit of happiness and well-being in development to guide their members' public policies." (UN News Centre 2011, 2)

Discussions on the GNH concept have largely been done on the national level. On the other hand, smallholder farmers composed about two-thirds of the Bhutanese population (NSB 2007), so that the government has given priority to addressing rural poverty and improving rural livelihoods by intensifying crop and livestock production, while at the same time giving due consideration to environmental and cultural aspects (MoA 2002). Bhutan has wide-ranging agroecological conditions—from subtropical to alpine areas—and varied access to markets

(Samdup et al. 2010). Therefore, possibilities of intensifying agriculture and impacts on the environment differ from region to region. To operationalize the GNH concept, understanding the issues to be addressed not only at the higher aggregate level (national) but also at the lower levels (farms) is imperative.

This study intended to develop a methodological approach to identify the important GNH issues at the farm level and to evaluate the importance of GNH to smallholder farmers. Given the different agroecological zones and varying levels of agricultural intensification in Bhutan, the study selected four representative areas from which to obtain a comprehensive view of GNH issues.

## BACKGROUND

### **Bhutan: An Overview**

Bhutan is a small, land-locked country bordered by China in the north and India in the south. It encompasses an area of 38,394 square kilometers (km<sup>2</sup>), with forest areas covering 72.5 percent and arable land, 7.8 percent (NBS 2007). It has 20 districts and 205 blocks, with Thimphu city as the capital. Its population in 2011 was 738,300 (HDR 2011). A constitutional monarchy since 1907, Bhutan adopted in 2008 a democratic constitutional monarchy type of government, with a decentralized system of governance.

Bhutan is one of the world's 10 biodiversity hot spots; it is home to a diverse array of flora and fauna, including 5,603 species of vascular plants, 400 lichens, 200 mammals, and about 700 birds, in addition to the currently known 105 endemic plant species. The country also hosts a number of globally threatened species, including 27 mammals and 18 birds (HDR 2011; MoAF 2011).

A nationwide household income and expenditure report indicates that the percentage of the Bhutanese population living below the national poverty line declined from 32 percent in 2003 (NSB 2004) to 23 percent in 2007 (NSB 2007) mainly due to increased economic activities. In 2011, 90 percent of the population had health coverage, 83 percent had access to safe drinking water in 2010, and about 55 percent had mobile phones (NSB 2011).

Bhutan's gross national income (GNI) in 2012, converted to dollars using 2005 purchasing power parity (PPP) rates per capita, was USD 5,246 (USD 1 = BTN 45.73) (HDR 2013). The annual GNI growth in 2012 increased by 3.5 percentage points over that in 2010, but in both years Bhutan ranked 140 out of 187 countries in terms of the Human Development Index (a composite index of income, life expectancy, and education indicators). The GNI coefficient showed a skewed distribution of income: rural income was generally far lower than the urban income (HDR 2013). Therefore, Bhutan needs to adapt the concept of GNH to address the needs of the country's largely rural population.

In 2010, the primary sector (consisting of crops, livestock, and forestry) accounted for 16.8 percent of the country's GDP; the secondary sector (manufacturing, hydroelectricity, and construction) contributed 40.5 percent; and the tertiary sector (service industries, wholesale, retail, trade, finance, and insurance) was responsible for the remaining share (NSB 2011). In terms of food sufficiency, Bhutan aims for 70 percent self-sufficiency in cereal production (MoA 2002). The current cereal sufficiency level—66 percent—is already close to the target (MoAF 2011). The staple food crop is rice and the rice self-sufficiency target by 2013 was set at 65 percent, which was optimistic given the previous level of 48 percent (MoAF 2011). In agriculture, the economic opportunities are in producing commodities that can capture the off-season markets and in small-scale agro-

industries that can produce exclusive products for niche markets in India and elsewhere (e.g., organic rice, vegetables, cheese) (MoA 2009). Importing primary products, like rice and milk, is imposed minimal taxes, which make the imported items much cheaper than the local produce. In response to such trends, the government developed an intensification strategy called Production, Accessibility and Marketing (PAM) (MoA 2002). This strategy encourages farmers to work in groups to reduce their production and marketing costs, to maintain product quality (inspected by the food regulatory body in Bhutan), and to become more competitive with imported products.

### **GNH: A Historical Perspective, Definitions, and Operationalization**

The term GNH was first coined by the fourth King of Bhutan, when he declared that GNH is more important than gross national product (GNP) (Ura and Galay 2004). International interest in the GNH concept ensued and international conferences on GNH were conducted in 2004 (1st, Bhutan), 2005 (2nd, Canada), 2007 (3rd, Thailand), 2008 (4th, Bhutan), and 2009 (5th, Brazil). Many opinions and interpretation of the GNH concept have been offered, and the most widely used description is that “GNH measures the quality of life of a country in a more holistic way (than GNP) and believes that beneficial development of human society takes place when material and spiritual development occur side by side to complement and reinforce each other.” (CBS 2012) The current official definition of GNH is that it is a development approach that seeks to “achieve a harmonious balance between material well-being and the spiritual, emotional, and cultural needs of an individual and society” (GNHC 2010). The GNH concept guides the five-year planning process in Bhutan (DoP 2004). At the national level, the erstwhile

Planning Commission was designated as the GNH Commission of Bhutan to operationalize GNH. Subsequently all ministries formed a GNH Committee to review all policies and projects so that these will be coherent with the four GNH pillars.

The Centre for Bhutan Studies has developed a GNH index to assess human well-being and progress at the national level (CBS 2012). The GNH index aims to provide an overall picture of how GNH is distributed in Bhutan, and can also zoom in to identify who is “happy” and who is “not yet happy.” Since the GNH index can be unpacked into subgroups such as districts, age groups and gender, policymakers can use it as a tool to address questions like how to increase GNH and to track changes over time (CBS 2012).

The four GNH pillars (Rinzin, Vermeulen, and Glasbergen 2007) are further classified into nine domains or areas and 33 indicators (Table 1) to have a better understanding of GNH and to reflect its holistic range (CBS 2012). The socioeconomic pillar has three domains (health, education, and living standard) with 11 indicators; the environment pillar has one domain (ecological diversity and resilience) with four indicators; the cultural pillar has four domains (psychological well-being, time use, community vitality, and culture) with 14 indicators; and the good governance pillar has one domain (good governance) with four indicators. The four pillars are connected; progress in one indicator can influence another indicator in another domain.

To ensure that policy interventions are in line with the four GNH pillars, the government, through the Center for Bhutan Studies (CBS), developed a GNH screening test (GNHC 2010). The test has 22 variables encompassing the nine domains. These variables are different from the GNH indicators; for example, in the domain “living standards,” one of the variables is equity but the indicators are per capita income,

assets, and housing. Scoring is 1-4: 1 (the policy will negatively impact the equity income distribution), 2 (do not know), 3 (will not have any negative effect), and 4 (will have a positive impact). A recommended policy intervention must score a minimum of 70 percent in the GNH screening test before it can be submitted to the cabinet for approval. This means that, on average, a variable must score at least 3 (to cross the 70% cut-off mark). To date, only five policies have passed the GNH screening test. To what extent the GNH concept is trickling down and benefiting the rural areas needs more assessment.

Today the stage of the GNH conceptualization resembles an era when sustainable development (SD) was being conceptualized, about 2.5 decades ago (WCED 1987). SD covers economic, ecological, and societal dimensions. Compared with GNH, SD has no separate dimension for culture and good governance. Considerable amount of research on the operationalization of SD had been conducted in the last 2.5 decades. Early pioneers who attempted to operationalize sustainability (e.g., De Wit et al. 1995; Bell and Morse 2003) proposed sets of indicators. Based on these methodologies, Cornelissen (2003) and Mollenhorst and de Boer (2004) developed a participatory approach for SD assessment. This includes the following steps: (1) stakeholder meetings; (2) determining the context-dependent SD issues defined as problems related to economic, environmental and societal aspects by stakeholders, literature review, and consulting experts; (3) translating the SD issues into measurable indicators; (4) calculating the level of the indicators; and (5) assessing the progress of SD. This study makes use of this concept to identify GNH issues in smallholder farming communities.



## MATERIALS AND METHODS

### Study Approach

To identify the GNH issues at the farm level, the study selected four areas representing the four main agroecological zones of Bhutan: extensive, semi-intensive, intensive, and intensive peri-urban. The categories are based on cattle and crop management practices, the use of external inputs, and market accessibility. The selection of the four areas recognizes that diverse issues affect smallholder farmers in different agroecological conditions. Table 2 shows the characteristics of the four study areas. Market access varied by distance, based on the existence or absence of motorable roads to the local and major markets. Khaling (east Bhutan), representing the extensive farming system, is characterized by cattle grazing mainly in the forest and on natural grasslands with some night feeding, no crop irrigation, low market access, and a mild temperate climate. Dala (south Bhutan), representing the semi-intensive system, has cattle grazing with some stall-feeding, crop irrigation, medium market access, and a sub-tropical climate. Chokhor (central Bhutan) and Chang (west Bhutan) represent the intensive systems, which are characterized by cattle grazing and stall-feeding, crop irrigation, and a temperate climate. Chang is a peri-urban area close to the capital city; hence, it and Chokhor had relatively good access to markets. Many farmers were members of dairy groups, which collectively sold milk. In all four areas, cattle were fed crop residues (e.g. straws of rice, wheat, maize, and buck wheat) when available.

The study surveyed the perceptions of various stakeholders (e.g., farmers, consumers, development workers, and policymakers) on GNH issues. It ensured that a mix of smallholder farmers (in terms of gender, age, and status) attended the stakeholder meetings. Both top-down and bottom-up participatory approaches were used (Figure 1). The top-down approach

(opinion of policymakers and experts, data from literature) is known to neglect the values and needs of stakeholders as it leans heavily on the technical aspects. On the other hand, the bottom-up approach risks neglecting national and global issues (Mitchell 1996), and may also be more risk averse.

### Determining the GNH Issues

The study organized a field workshop in each area (1.5 days each) to identify GNH issues (Figure 1). The use of participatory methods (e.g., participatory rural appraisal) facilitated the exchange of views, experiences, and knowledge of relevant stakeholders (Chevalier 2004). Each workshop was attended by about 30 farmers; the locally elected farmer representative; a private retailer active in the area (dealing with crop and livestock food products); the agriculture, forest and livestock extension staff working in the area; and a representative of the district veterinary office and central livestock office in Thimphu. The participants identified the main issues as well as their causes and effects using a problem tree.

A national level workshop was held in Thimphu in 2002 (Figure 1). The participants included a multidisciplinary team composed of three district officers (livestock, agriculture, and forestry) from each study area (total of 12), a farmer representing each study area (total of 4), a livestock production specialist, a social science expert, a veterinarian, a policy and planning officer, and a moderator. The moderator briefed the participants about the various GNH issues derived from the four field workshops and the problem tree. Some documents were reviewed to complement the workshops (Figure 2), such as the Livestock Sector's Ninth Five-Year Plan (DALSS 2002), Renewable Natural Resources' Ninth and Tenth Five-Year Plans (MoA 2002; MoA 2009), and the Ninth Five-Year Plan, main document (Planning Commission 2002).

**Table 1. The four pillars, 9 domains, and 33 indicators of Gross National Happiness**

Pillars <sup>a</sup> and Domains	Indicators
Sustainable and Equitable Socio-economic Development <sup>a</sup>	
Health (4)	Self reported health status, healthy days, long-term disability, mental health
Education (4)	Literacy, educational qualification, knowledge, values
Living standard (3)	Household income, assets, housing quality
Conservation of Environment <sup>a</sup> (1 domain and 4 indicators)	Pollution, environmental responsibility, wildlife, urban issues
Ecological diversity and resilience (4)	Life satisfaction, healthy days, long-term disability, mental health
Preservation of Culture <sup>a</sup> (4 domains and 14 indicators)	Language, artisan skills, socio-cultural participation, <i>driglam namzha</i> (etiquette)
Psychological well-being (4)	Social support, community relationship, family, victim of crime
Culture (4)	Working hours, sleeping hours
Community vitality (4)	
Time use (2)	
Good governance <sup>a</sup> (1 domain and 4 indicators)	Political participation, political freedom, service delivery, government performance
Good governance (4)	

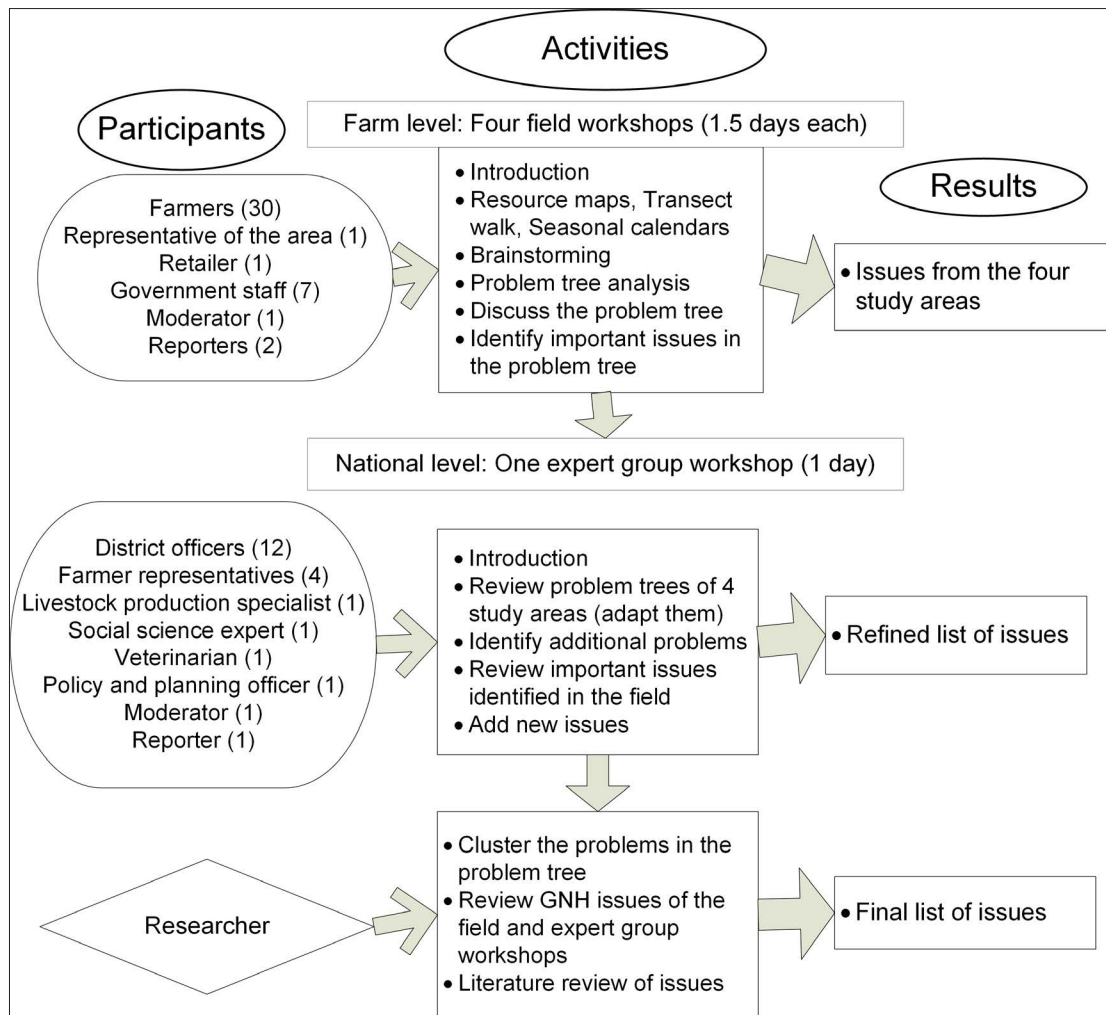
Source: CBS (2012)

**Table 2. Table 2. Major characteristics distinguishing the four study areas in Bhutan**

Area	Khaling	Dala	Chokhor	Chang
System	Extensive	Semi-intensive	Intensive	Intensive, peri-urban
Altitude (masl)	1800–1900	1500–1800	2500–3500	2300–2500
Agro-ecological zone	Warm temperate	Sub-tropical	Cool temperate	Cool to warm temperate
Soil types	Clay and loam	Sandy, clay, & loam	Clay and loam	Clay and loam
Cropping system				
Rain-fed	+++	+++	++	++
Irrigated	-	+	++	+++
Major crops	Potatoes, maize	Rice, maize, cardamom	Buckwheat, potatoes, apples	Rice, wheat, apples
Cattle management	Mainly grazing, night feeding	Mainly grazing, some stall-feeding	Stall-feeding and grazing	Stall-feeding and grazing
Market access (Time to reach local markets)				
Walking	30 min. to 1 h	1 to 2 h	30 min. to 1 h	No need to walk, taxis and buses ply frequently
By vehicle	No motorable road	No regular transport services; if available 15 to 30 min.	No regular transport services; if available 10 to 20 min.	Local market in the capital, Thimphu, at 20 to 30 min.

Source: Samdup et al. (2012)

Note: +++ high frequency ++ moderate; + little; - none

**Figure 1. The processes involved in identifying Gross National Happiness issues**

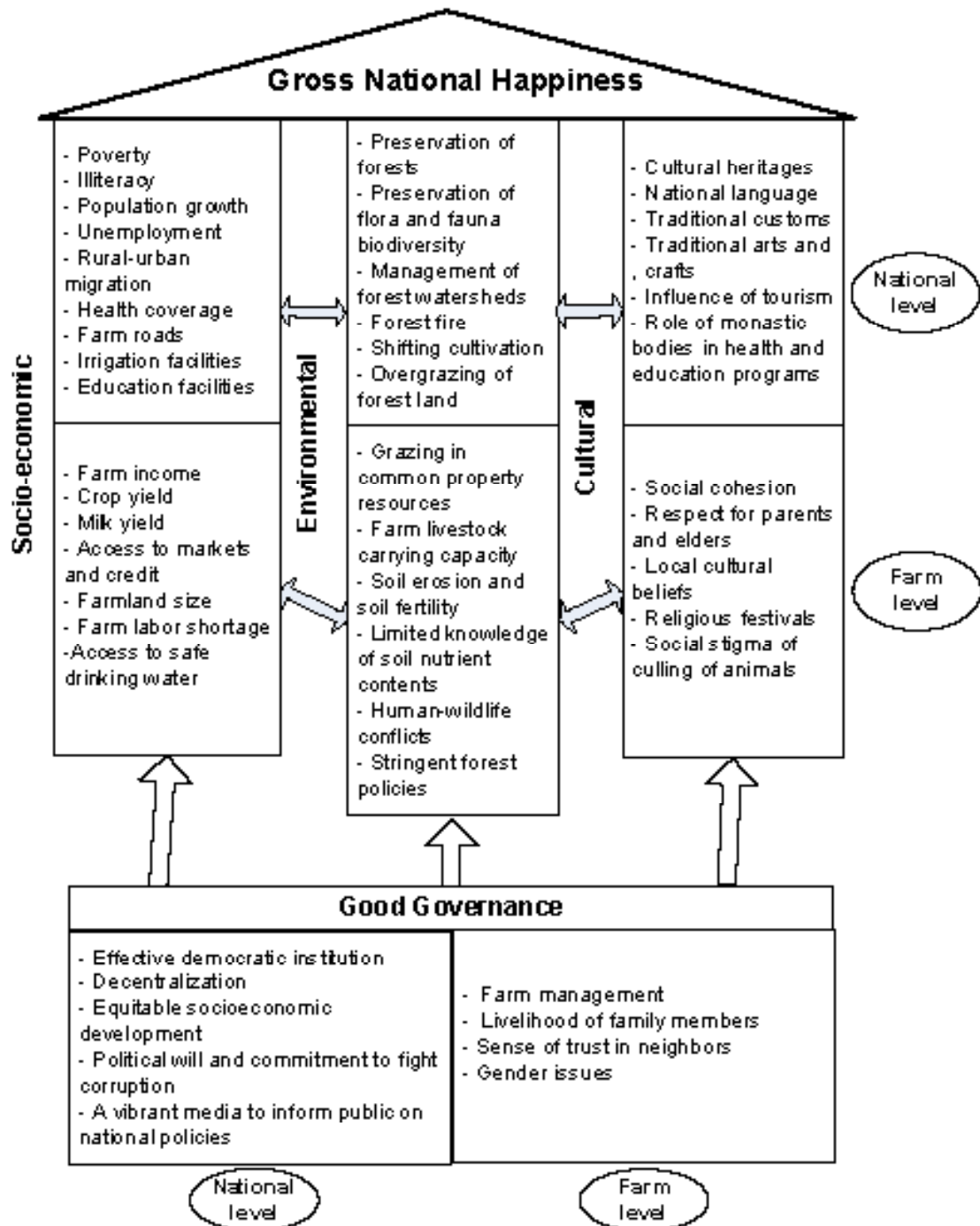
## RESULTS

Figure 3 presents the results of the problem tree analysis. The problem tree derived from the field workshops was used during the discussion at the national workshop. Additional issues such as overgrazing of forest lands, grazing in common property resources (CPR), ban on shifting cultivation, and influence of tourists on local culture and traditions were identified at the national workshop. The different perceptions obtained from the national level are indicated in italics.

A summary of important issues for the four GNH pillars are given in Figure 3, based on the field and national workshops and the literature review. It should be noted that this study refers to “good governance” as a foundation rather than the fourth pillar, since good governance is extremely important to address the GNH issues of the three pillars.



Figure 2. Important GNH issues derived at the national and farm levels, trade-offs and dependencies



## **Sustainable and Equitable Socioeconomic Development Issues**

### ***National Level***

The national workshop viewed poverty as a major socioeconomic concern. Poverty incidence in 2007 was 23 percent: rural poverty was 31 percent and urban poverty 1.7 percent (NSB 2007). Twenty-eight percent of the districts reported seasonal food insecurity in 2000; 75 percent of the food-insecure households were located in the eastern and central districts of the country (DoP 2004). Bhutan's internal migration rate was 6 percent in 2009 (HDR 2009), contributing to farm labor shortages.

In 2010, the population rose at a rate of 1.3 percent, while unemployment rate was 3.3 percent (2.1% in the rural and 5.8% in the urban areas) (NSB 2011). Literacy rate was about 60 percent and basic health coverage was 90 percent—however, there was only one doctor per 3,850 persons (NSB 2011). The national workshop expressed the need for better market accessibility in the rural areas such as farm roads and irrigation facilities. Another major issue mentioned was the need for better education facilities in rural areas.

### ***Farm Level***

All the field workshops identified low farm income as the major socioeconomic issue in the rural areas. Farmers generally attributed low farm income to low crop yields, lack of high-yielding crop varieties, low milk yield, and lack of improved crossbred cattle. They also indicated limited access to markets and credit (especially in the extensive area). The farmers supplemented low farm income by working off-farm as hired laborers; remittances from relatives working in urban areas also contributed to the family income. The small farmland size was another major factor for the low crop and livestock production: the average household in

the intensive area owned 2.9 hectares and those in the extensive area, 1.2 hectares (Samdup et al. 2010). Farm labor shortage was an important issue also, especially in intensive peri-urban and extensive areas. Access to safe drinking water was a concern in the extensive area.

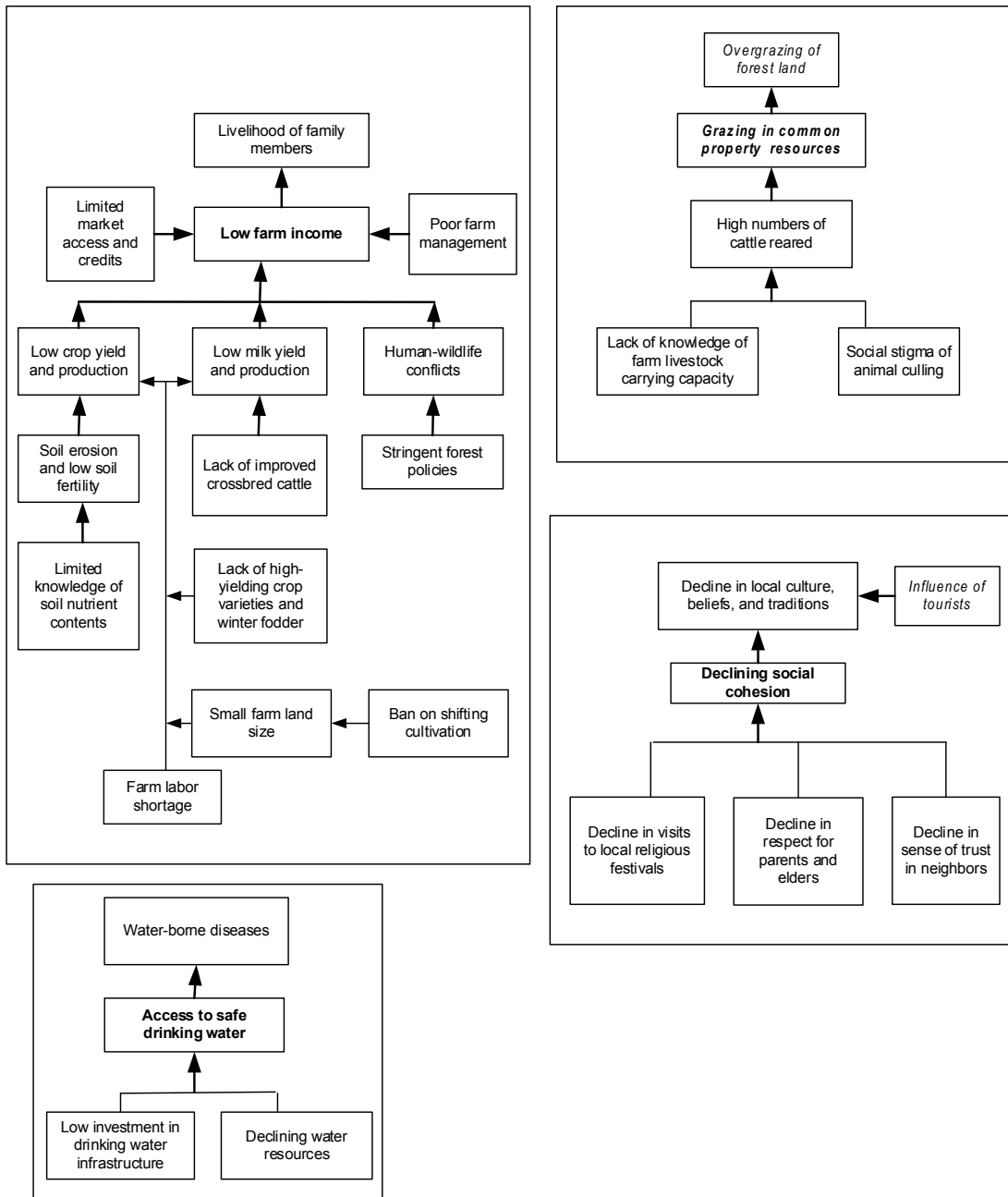
## **Environmental Preservation Issues**

### ***National Level***

Bhutan has given priority to environmental and biodiversity conservation in its development strategy, which, reflecting traditional norms and culture, aims to maintain at least 60 percent of the country forested in perpetuity (HDR 2011). However, the national workshop cautioned that given the high human population increase and infrastructure development, a forest cover of 60 percent for all time would be a challenge. The environmental impacts of anthropogenic actions include overharvesting of timber and firewood, poor logging practices, and overgrazing (MoA 2009).

Given that hydropower is a major economic activity in Bhutan, proper management of the forested watersheds is required to guarantee minimal sedimentation of rivers for effective hydropower generation (MoA 2009). Participants in the national workshop also cited forest fires as largely contributing to forestland degradation in Bhutan. A total of 643 forest fires occurred between 1998 and 2008, razing 83,759 hectares (MoA 2009). Moreover, shifting cultivation (*tseri*), a form of slash and burn farming in the sub-tropical districts of Bhutan, is an ecological concern. Traditionally, after a crop or two, the *tseri* land is usually left fallow for a period ranging from 4 to 12 years. With increasing human population, however, farmers practice shorter fallow periods, which result in soil erosion, poor soil fertility, and forest fires (MoA 2002). The Land Act of Bhutan 2007 bans such farming practices (MoA 2009). However, at the field workshops some

**Figure 3. Summary of the problem tree analysis in the four study areas**



farmers mentioned that such practices continue in remote areas.

Forests in Bhutan are state owned, but communities in the districts have user rights for grazing cattle and collection of fuelwood, timber for rural housing and farm buildings, and non-wood forest products (MoA 2009). Overgrazing of forestland is another area of concern (MoA 2002; Moktan et al. 2008).

### ***Farm Level***

During the field workshops, the extension agents noted the intensive use of common property resources (CPR) for cattle grazing. This is a concern because it leads to overgrazing of forestland. They said farmers rear excess cattle on their farms due to lack of knowledge of the carrying capacity of the land and the social stigma of culling cattle. The farmers indicated, however, that the use of CPR was indispensable for them and that overgrazing issues varied from village to village.

The problem tree analysis revealed concerns on soil erosion in farmlands due to excessive rains and steep topography, resulting in depletion of soil nutrients. Acknowledging their limited knowledge of soil nutrients, the extension agents noted that only a few studies have been done on soil nutrient (nitrogen-phosphorus-potassium or NPK) balance in their respective areas. All farmers in the four study areas expressed that environmental conservation—in terms of timber, food, carbon sequestration, and other various ecological functions—is useful. However, they considered some of the government's forest policies as very stringent such as the ban on killing wild boars and other wild animals (that predate some policies on livestock), which cause frequent human-wildlife conflicts and economic losses.

## **Preservation and Promotion of Cultural Issues**

### ***National Level***

The national workshop cited cultural heritage, the national language, and preserving traditional customs, art, and crafts as important cultural values. Promotion of cultural values and social cohesion is vital because nothing can compensate for their loss (Planning Commission 2002). The national workshop emphasized that balancing Bhutan's approach to globalization with the Bhutanese value systems is a major challenge of this pillar. As more tourists visit Bhutan because of its cultural heritage and traditional customs, the irony is that the increasing number of tourists could influence the country's cultural heritage and traditional customs. However, the government's policy is to increase tourism, especially ecotourism and cultural tourism. The workshop participants mentioned that the monastic bodies have also been catalytic in conveying the government's health and educational programs.

### ***Farm Level***

Within Bhutanese society, social cohesion (bonding of individuals as members of extended families and communities) is a very important cultural value (Thinley 1999). Some farmers noted that some practices, such as providing support to neighbors in terms of farm labor and borrowing food after failed crop harvests, are now waning. They observed a weakening in family cohesion as many family members have settled or are working in other parts of the country. Family members used to visit their village once or twice a year; now the visits have become rare—once in 2–5 years—due to economic reasons (travel costs and the custom

of bringing many gifts for relatives and well-wishers) and hectic urban work responsibilities. Other reasons include improved mobile phone coverage, private telephone booths, and better banking coverage.

The farmers indicated that the age-old customs of honoring parents and respecting elders and participation of family members in annual traditional religious rites and religious festivals need to be preserved. Annual religious festivals exist all over Bhutan and maintenance of cultural practices and traditions is required, but most farmers observed that fewer and fewer people working in the urban areas have been participating.

Buddhist cultural beliefs emphasize a harmonious coexistence with the natural elements. Buddhists believe that mountains, deep ravines, and ancient trees and rocks are the abode of spirits, gods, and demons (Rinzin, Vermeulen, and Glasbergen 2007). Disturbing these elements would enrage them and bring illness and even death to the family, while appeasing them may bring luck and prosperity. Farmers, especially from the intensive and extensive areas, still believed in these cultural values to avoid ill luck in their families and farm work.

Farmers in the two intensive areas said that the social stigma of culling and slaughter of animals was high due to the presence of many monasteries and religious sites. To address the situation, in 2005 the Department of Livestock put in place a bull rearing center, where farmers could sell the male cattle they do not wish to rear. The center had a capacity of 70 bulls. Butchers procured these animals and slaughtered them in Bhutan. This center closed in 2010 due to public resentment on cattle slaughtering. The center is now a heifer-breeding farm.

### **Promotion of Good Governance Issues**

#### ***National Level***

In 2008, Bhutan became a democratic constitutional monarchy. The good governance issues in the context of GNH are efficiency, accountability, transparency, and professionalism of the government, with people's participation in the planning and decision-making processes (RGOB 2005). These issues underscore the need to have the political will to vigorously fight corruption and a vibrant media to inform the public on important national and local policies.

**Table 3. The four pillars and indicators of GNH vis-à-vis issues at farm level**

<b>GNH Pillars<sup>a</sup> and Indicators</b>	<b>Issues Derived at Farm Level</b>
I. Sustainable & Equitable Socio-economic Development <sup>a</sup>	
Household income	Low farm income Low crop yield and production Low milk yield and production Small farm land size
II .Conservation of Environment <sup>a</sup>	
Incidence of human-wildlife conflict	Human-wildlife conflict Stringent forest policies
III. Preservation of Culture <sup>a</sup>	
Socio-cultural participation	Decline in visiting local religious festivals
Family values	Decline in respect for parents and elders
Community relationship	Declining social cohesion
IV. Good Governance <sup>a</sup>	No issues linked to the GNH indicators



Prior to the change in the form of government, district development committees (DDC) and block development committees (BDC) were established in 1981 and 1991, respectively (Planning Commission 2002). The DDCs and BDCs make their respective local development plans, prioritize the needs, and delegate financial and administrative powers to local leaders. Farming communities in the districts and blocks elect the members of their DDCs and BDCs. The major role of these members is to communicate the concerns and needs of their respective farming communities in committee meetings. The elected DDC and BDC chairpersons have the authority to approve the implementation of activities for the farming communities.

### ***Farm Level***

The conventional GNH good governance issues were irrelevant to farmers. For them good governance refers to a farmer's management decisions within their farm system that affect the performance of the farm. They cited the need for the household head to ensure judicious use of the family's financial resources to secure the livelihood of the family members and their social needs (e.g., children's health and education). For instance, excessive alcohol consumption should be avoided, since it could affect the family's ability to secure basic necessities (i.e., food, clothing, and shelter). The extension agents, on the other hand, noted the need to promote trust among neighboring farmers to facilitate discussion and implementation of community projects in their village.

Regarding gender issues, the farmers (both women and men) did not find such issues of major importance. Currently both women and men share in most of the work as well as in making decision on use of the family income. As to education, the school enrollment rates of boys and girls were almost the same in

2011, but the enrollment of females in training institutions was just almost half that of the males (NSB 2011).

### **Common GNH Indicators and Issues**

The national and local workshops yielded only a few common GNH indicators at the national level (Table 2) and perception of issues at the farm level (Table 3). Some indicators are linked to issues at the farm level, including household income (sustainable and equitable socioeconomic development pillar), incidence of human-wildlife conflicts (preservation of the environment pillar), and socio-cultural participation, family values, and community relationship (preservation of culture pillar). In the case of the good governance pillar, none of the indicators were linked to issues derived at the farm level.

## **DISCUSSION**

### **Participatory GNH Approach**

The participatory methods enabled farmers to be involved in activities that facilitated the capture of the local knowledge and intellectual capabilities in this process. Formalization of community knowledge through participatory techniques can generate an impressive amount of information in a relatively short space of time, leaving time for a more selective structured formal survey (IDRC 2013). Encouraging the farmers to be proactive in the field workshops was catalytic to obtaining transparent and independent views; the use of the problem tree analysis helped to structure views on real life problems of the farmers, the causes and effects of issues, and indicators. Without such a methodological approach, issues such as the policy on shifting cultivation, use of CPR, and soil nutrient issues would not have been identified. Farmers from the intensive

**Table 4. Perception of GNH issues in the four study areas**

Area (System)	Khaling (Extensive)	Dala (Semi- intensive)	Chokhor (Intensive)	Chang (Intensive, Peri-urban)
<b>I. Sustainable &amp; Equitable Socio-economic Development*</b>				
Low farm Income	++	++	+	+
Limited market access and credits	+++	++	-	-
Farm labor shortages	+++	++	++	++
Low crop yield and production	+++	++	++	+
Soil erosion and low soil fertility	+++	+++	++	+
Limited knowledge on soil nutrient contents	+++	+++	++	++
Low milk yield and production	+++	++	++	+
Lack of improved crossbred cattle	+++	++	++	+
Lack of high yielding crop varieties, winter fodder	+++	++	+	+
Access to safe drinking water	++	++	+	+
<b>II. Conservation of Environment*</b>				
Ban on shifting cultivation	+++	++	-	-
Human-wildlife conflicts	+++	++	++	+
Stringent forest policies	+++	++	+	+
Lack of knowledge on farm livestock carrying capacity	+++	++	++	++
<b>III. Preservation of Culture*</b>				
Decline in respect for parents and elders	++	++	++	++
Social stigma on culling of animals	+++	+	+++	+++
Decline in visiting local religious festivals	+++	++	+	-
Declining social cohesion	+	+	++	++
<b>IV. Good governance*</b>				
Poor farm management	+++	++	+	+
Livelihood of family members	+++	++	++	+
Decline in sense of trust for neighbors	+	+	++	++

*Note:* \* pillars of Gross National Happiness

+++ major issue; ++ moderate issue; + minor issue; - no issue

areas were more vocal, due to their exposure to development activities. However, the problem tree approach focuses on identifying negative issues. Therefore, the positive aspects of GNH (e.g., meditation practices, cultural literacy, community vitality) that make farmers 'happy' were not captured (CBS 2012). If the socioeconomic pillar (Figure 3) were separate, then it may be possible that the specific economic and social issues could be better defined and understood as has been done in the

three dimensions of sustainable development. The participatory approaches used in the study showed that some issues identified by the participants during the farm-level workshops were not reflected in the national-level issues. Such participatory approaches can raise local expectations, however, and if nothing tangible emerges, local communities may come to see the processes as a transient external development phenomena (IDRC 2013).

### **GNH Domains and Indicators**

The CBS-generated indicators (Table 2) do not address several of the GNH issues at the smallholder level. Consultations at the smallholder level had been minimal, which may be because the agriculture sector contributes only 17 percent of the GDP, although it constitutes 69 percent of the population (NSB 2007). The allocation of the domains and indicators among the four GNH pillars is biased toward the cultural pillar (Table 2). This concern is important since all nine domains are given equal weights; all the indicators are also of roughly equal weights. Many of the 33 indicators are qualitative and rather subjective. In the GNH concept, some of the issues and indicators are similar (in contrast, sustainable development issues and indicators are separate concepts and well defined). The refinement of the GNH assessment criteria should consider the above concerns.

### **Important GNH Issues**

The issues presented in Figure 3 indicate the need to study trade-offs and dependencies among the different GNH pillars (e.g., grazing in CPR and farm income) and between the national and farm levels (e.g., role of monastic bodies in health and education programs and social stigma of culling of animals). Table 4 summarizes the differences in perceptions of the GNH issues in the four study areas. While most of the GNH issues were experienced in all study areas, their levels of intensity varied. For instance, access to markets and credit and shifting cultivation were not concerns in the intensive areas, which are located near the urban areas.

The stakeholders in the field workshops unanimously identified sustainable and equitable socioeconomic development as their main concern among the four GNH pillars. The expert group workshop likewise cited

the need to improve rural livelihoods through crop and livestock intensification programs. This result corresponds with the findings of Rinzin, Vermeulen, and Glasbergen (2007) that although the government accords high priority to environmental conservation, farmers consider sustainable and equitable socioeconomic development as more important because without economic development, environmental preservation is not possible. The views expressed during the national and field workshops on the socioeconomic issues, though expressed differently, were consistent. The national workshop mentioned poverty, illiteracy, and the need for a more balanced and equitable socioeconomic development; the field workshops highlighted practical concerns on farm income and crop and milk yields.

Notably, the national workshop identified grazing in CPR, which the farmers did not mention. Views on grazing in CPR in the literature vary. Rosset (1997) considers cattle grazing as a serious threat to biodiversity, because it reduces undergrowth and changes structure and tree species composition. Roder, Gratzer, and Wangdi (2002) argue that grazing enhances conifer species regeneration by removing the herbaceous biomass, but concede that grazing does diminish the number and density of broadleaved species. Several authors (e.g., Norbu 2002; Chophyel 2009) cite the need for farmers to practice appropriate grazing practices in CPR.

While forest fires occur due to a number of factors, the national workshop indicated that shifting cultivation is a significant factor, which is probably the reason for its ban. However, most farmers in the extensive and semi-intensive areas are not happy with the ban policy. They view it as a top-down decision that negatively affects their livelihoods. On the other hand, shifting cultivation may not have been banned if farmers practiced controlled and proper “slash and burn” practices and kept the land fallow for appropriate

periods. It is noted that the CBS-generated GNH indicators (Table 2) do not address forest fires and shifting cultivation.

The farmers' appeal for the government to reconsider its stringent forest policy against killing wild animals is a serious concern since the government has limited or no compensation for losses due to wild animals. The GNH indicators on human-wildlife conflicts assess only whether or not there has been incidence of such conflicts (i.e., a lot, some, little, not at all, or not applicable).

The views of farmers and extension agents on soil nutrient depletion (due to steep topography) and limited knowledge of soil nutrients (NPK) were consistent. According to Norbu and Floyd (2004), soils on mountain slopes inherently exhibit low fertility due to high erosion potential and limited organic content, so that organic matter is lost and nutrients are depleted. Capacity building in soil science and nutrient management for the extension agents is urgently needed.

Bhutan considers forest and biodiversity conservation as important. As such, it issued a policy that 60 percent of its land area should be forested in perpetuity. This policy, however, has compromised the direct economic benefits from logging and timber export. On the other hand, it has enabled Bhutan to preserve its forest watersheds for the production of hydroelectric power and to serve as sources of clean water and ecotourism. The environmental pillar has only one domain and a few indicators (CBS 2012), which could undermine its importance in the development of a holistic set of GNH indexes. The GNH environmental indicators focus on pollution, ecological responsibility (e.g., waste reduction, water conservation, incidence of human-wildlife conflicts), and urban aspects (e.g., visit to green spaces or nature reserves, travel sustainability [walk, bicycle, public transport]). Of these issues, only human-wildlife

conflict was identified in both the field and national workshops

On the cultural front, some of the expert group members noted the influence of tourists visiting Bhutan and their impact on the local culture. Tourists travel to different countries to experience a different culture, among others reasons (Alhamidi et al. 2003). While some of the expert group members cautioned about the influence of large-scale tourism, others argued that the culture of any nation state is dynamic and is subject to change over a period. This concern was not mentioned in the field workshops, however.

The social stigma of culling animals was high especially in the extensive and intensive areas. The paradox is that although Bhutan is a Buddhist society, the Bhutanese consume a lot of meat (DALSS 2002). In 2005, the annual per capita consumption of meat was 10.3 kilograms (DoL 2005), higher than the average annual per capita consumption in South Asia at 5.8 kilograms (FAO 2009). Yet when it comes to culling animals, the Bhutanese are restrained. Local meat production in 2005 was 2,560 metric tons and imported meat amounted to 4,666 metric tons (DoL 2005). Slaughtering of cattle is not common in Bhutan, therefore, unproductive cattle tend to be kept in the forest. Recently some animal activists (e.g., Jangsa Animal Saving Trust in 2010), who are against animal slaughter, have started to procure animals from butchers and then released the animals in the forests. The government is debating over such intervention since once released in the forests, the animals are on their own—there is no one to care for them. There is also the risk from predation, overgrazing of CPR, and disease outbreaks (e.g., foot-and-mouth disease in cattle, *peste des petits ruminants* (PPR) in goats, and bird flu (H5N1) (DoL 2013).

As a part of good governance, administrative and political authorities have been decentralized to the districts. Rinzin, Vermeulen, and Glasbergen (2007) conducted a poll on the benefits and risks of decentralization on 775 respondents in 10 of the 20 districts in Bhutan. The majority (58%) of respondents indicated that the new system of local governance has raised the risk of corruption; more than one-third (38%) said governance capacity was lacking; and more than a quarter (28%) said that leadership was inequitable.

Notably, views on good governance (e.g., corruption) were hardly expressed during the field workshops. Farmers generally do not criticize openly when associated authorities are present (in this case, the head of the block). This is a methodological concern that needs to be addressed. Farmers in general (both men and women) did not note any gender issues at the farm level. HELVETAS (2010), however, mentions that in general both women and men perceive women as less confident than men. He observed that while this perception has not been a barrier to women's participation in agriculture, household decisions, property inheritance, and getting involved at village level meetings, it has negatively influenced participation of women in tertiary education and vocational training.

That the issues identified at the farm and national workshops were not consistent points to the different priorities of the stakeholders involved, particularly, farmers, policymakers, and technical experts. Therefore, the two-pronged participatory approach of having both bottom-up and top-down strategies is required to address both farm and national level issues.

## CONCLUSION

The GNH concept has been widely discussed at different hierarchical levels in Bhutan. However, more efforts are required from the policymakers to address and incorporate the concerns and issues of smallholder farmers. Among the four GNH pillars, sustainable and equitable socioeconomic development was identified as the top concern by all stakeholders in the four study areas; this was followed by environmental preservation. Low farm income from crop and livestock production and human-wildlife conflicts were issues that came out strongly in the field workshops. By using participatory approaches, this study was able to obtain the farmers' views on real-life problems, the causes of these problems, and the effects of GNH policies. In addressing GNH issues, the trade-offs and dependencies among the four pillars and between farm and national level as well as inclusive governance should be considered. Further, to ensure that the GNH issues of smallholder farmers are mainstreamed into the government policies, the GNH screening test should include more inclusive variables that address smallholder farmers' needs. Unlike the case in sustainable development assessment, wherein the issues and indicators are separate concepts and well defined, some GNH indicators are similar to the issues. To properly evaluate the progress of GNH at both farm and national levels, the GNH issues must be translated into indicators.



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