The Policy Environment of Vegetable-Agroforestry (VAF) System in the Philippines: Are there incentives for smallholders?

D.C Catacutan and C.E Duque
World Agroforestry Centre (ICRAF-Philippines)

Abstract

In the Philippines, using agriculture as a basis for rapid economic growth requires both productivity revolution in smallholder farming and innovative policies and political commitment. An important aspect of this development has to do with expanding technical options that are adapted to the ecological potential of the area and to changing economic patterns, drawing on existing technologies in the short term and introducing new practices and technologies in the longer term. Vegetable-Agroforestry (VAF) is a viable farming system in the uplands; however, its viability is constrained by various factors, including farmers' inability to invest in the system, inadequate institutional structures for facilitating information flow, and lack of market incentives. Policy incentives are thus needed to stimulate smallholder investments in VAF systems.

This paper reports on the scoping study of the policy environment of VAF system. The study found that at least in theory, the policy environment is supportive of VAF system, but is insufficient in stimulating smallholder investments. Incentives for smallholders, albeit limited exist; correspondingly, disincentives persist. Large holders tend to benefit more from national level policies than smallholders, because the former have more access to policy information and can leverage the associated costs of policy implementation. It is recognized that some issues are better resolved through national-level policies, while a number of issues are better addressed by locally-formulated policies. For the vegetable sector, issues on price regulation and control, commodity protection, reducing costs across the market value chain, non-tariff barriers, and global trade require national-level policy interventions. For the tree sector, issues regarding restrictive policies, transaction costs, land tenure and resource rights, and domestic and international market incentives are also to be addressed through national-level policies. At the local level, promoting smallholder investments in VAF system requires decisive policy action in terms of improving the effectiveness of the extension system, with emphasis on improved technology provision and support for market linkages and infrastructure. Where national-level policies do not effectively address the needs of smallholders, locally-crafted policies are needed to offset this gap. Policy linkages between national and local levels need to be established, and policymakers need to mobilize adequate responses at both levels. Finally, the viability of VAF system depends on a whole set of policy environment that government can provide. It is therefore a political imperative.

Key Words: Agroforestry, incentives, smallholders, policy instruments

---

Research report for the VAF policy study, supported by SANREM-CRSP TMPEGS project in Southeast Asia.

1.0 Introduction

Historically, the Philippine uplands have relatively low populations and were politically and economically marginalized, but improved infrastructure has linked these regions much more closely with the national economy, so they have grown faster within the past few decades than the overall population (Scherr et al. 2001; Catacutan 2005). Consequently, the cultivated areas for agriculture expanded by a magnitude three times more than the cultivated area in 1903 (Sicat 2003). The agriculture industry is dominated by smallholders in terms of number. Between census years 1971 and 1991, the average farm size decreased from 3.6 to 2.1 hectares, as the number of farms increased from 2.3 million to 4.6 million, with the total farm area increasing from 8.4 million to 9.9 million hectares (Philippine Department of Agriculture 2006). Temporary crop areas accounted for 76 per cent of total farms with the rest devoted to permanent crops composed mainly of coconut and fruit trees. Area planted to temporary crops was dominated by rice and corn, comprising 92 per cent, with the rest planted to other crops (Department of Agriculture 2006).

Based on data from the Food and Agriculture Organisation (FAO) in 1995, the impact of population pressure on arable lands in the Philippines is very high in terms of hectare per capita (Scherr 1999b; Catacutan 2007). This raised concerns that rapidly increasing population will soon outstrip future food supplies. As settled farming populations intensify production on steeply sloping lands, often with poor soils, rural poverty has become more concentrated (Scherr 1999a; 1999b; Catacutan 2005). There was strong presumptive evidence of permanent soil productivity loss on at least 20 percent of arable lands in the Philippines due to human-induced water erosion (Scherr 1999a; Catacutan 2007). Many upland farmers have engaged in environmentally destructive forms of economic behaviour because they have limited alternative economic options (Kummer 1984; Catacutan 2007). Soil degradation and loss of biological diversity are thus associated with current agricultural development in the uplands (Sajise & Ganapin 1990; Catacutan 2007). Hence, land management systems are needed that improve and sustain yields, while intensifying cropping to increase total annual productivity and at the same time reduce production costs to enhance profitability (Garrity et al. 1998).

The last decades saw the expansion of agribusiness in the uplands, putting more competitive pressure on smallholder farming and changing the economic and social structures in rural areas. An important aspect of this development trend has to do with expanding technical options that are adapted to the ecological potential of the area and to changing economic patterns, drawing on existing technologies in the short term and introducing new practices and technologies in the longer term (Catacutan 2007). According to the World Development Report (2008), using agriculture as a basis for economic growth in rapidly-transforming countries (like the Philippines) requires both productivity revolution in smallholder farming and

Research report for the VAF policy study, supported by SANREM-CRSP TMPEGS project in Southeast Asia.

innovative policies and political commitment to reduce rural-urban income disparities.

The World Agroforestry Centre (ICRAF) has shown that agroforestry, the planting of trees on farms, can increase total farm productivity and is a superior land use that improves food security and protects the natural environment. However, the economic benefits of agroforestry systems need to be induced. Income from trees is not immediate, and cereals and grains may not provide sufficient profit for farmers converting into agroforestry, hence, specialty cash crops like temperate vegetables (e.g., cabbage, cauliflower, broccholi, pepper etc.) are needed. Studies in developing countries have shown that profit by vegetable farmers were higher than farmers engaged in cereal production (SANREM-SEA LTRP 5 2005). Therefore, there is an incentive for cereal farmers in the context of agroforestry, to diversify with vegetables. Integration of vegetables in tree-based systems, or tree integration in vegetable production system, provides multiple benefits, including provision of micronutrients to the diet of the rural community and enhancement of on-farm biodiversity and environmental sustainability. Vegetable-Agroforestry (VAF) system is thus, a viable farming system in the uplands.

However, the key to farmer adoption of VAF system is not only its technical and environmental merits, but equally important is its acceptability to farmers. The viability of VAF system is constrained by various factors, including farmers' inability to invest in the system, inadequate institutional structures for facilitating information flow, and lack of market incentives. Cramb (2000c), in a socio-economic evaluation of soil conservation technologies in the Philippines, mentions that the obstacles to widespread adoption of good practices or innovations are formidable, because even fine-tuning the technical solutions to soil degradation is dwarfed by larger problems of regional political ecology (Catacutan 2007). This situation, however, is not unique to the Philippines. In the developing world in general, factors constraining adoption and spread of appropriate conservation technologies are complex, confronting problematic political and economic issues (Blaikie 1985; Catacutan 2007). The World Development Report (2008) mentions that agriculture for development could benefit the poor if governments and donors were to reverse years of policy neglect and remedy their underinvestment and misinvestment in agriculture, and can be best implemented with better-designed policies and decision-making processes most suited to each country's economic and social conditions, by utilizing political support, and by improving the governance of agriculture.

Philippine forests have been virtually exhausted, making the country the world's eight largest timber importer (Dauvergne 1997). On a positive note, this signals a strong demand for timber in the domestic market. If the timber industry can supply 75 per cent of the total domestic demand, then there is huge potential for

smallholder timber production in the country[1]. Ironically, the "tree growing" sector is marred by restrictive policies and lack of market incentives for timber and other tree products. Because of this, the Philippines remain a minor player in the forest market, despite current demands and pervasive tree planting efforts. In the vegetable sector, the nature and operations of international trading regimes under the rules of WTO[2] affect the chances of vegetable production, particularly among smallholder producers. On the one hand, WTO encourages market liberalization, but on the other hand, it promotes selective development, destroying the livelihoods of small farmers and agricultural workers (Pascual and Glipo 2002). Without policy efforts to remove non-tariff barriers, smallholder producers are bound to subsist in vegetable farming. As mentioned earlier, the larger political economy inflicts on all types of development, resulting in economic polarization, severely affecting the smallholders. Hence, there is a need for policies that clearly provide incentives that stimulate smallholder investments in VAF system. Correspondingly, disincentives to adoption must be identified and addressed if smallholders are to adopt the system. Thus, it is important to understand the policy environment surrounding VAF system in the Philippines, if smallholder investments are expected to have significant impacts on rural livelihoods and the environment.

This study involved an intensive review of national-level policies related to VAF system. At the local level, perspectives of vegetable producers, tree growers and policy-makers in Lantapan, an upland municipality in the southern Philippines were taken account, and local policies were examined. This paper reports on the policy environment of VAF system in the Philippines. It examines the "incentives and disincentives" of key national policies related to VAF, in the context of smallholders.[3] It describes the policy scenario and perspectives of farmers and stakeholders at the local level. It also presents the concept of "incentive" as an important element of a policy instrument. It concludes by rationalizing the need for locally-crafted incentive policies, to complement with national level policies, to encourage smallholder investments in VAF systems in Philippine uplands.

2.0 Aims, Questions and Methods

The study aimed to describe the policy environment of VAF system in the context of smallholders. The initial review of national-level policies pointed out that there was no policy specific to VAF; hence the study focused on policies governing the tree

[1] The Department of Environment and Natural Resources (DENR) estimates that timber imports account to 75% or 2/3 of the total domestic demand.

[2] World Trade Organization

[3] In this study, "policy instrument" refers to programs embodied in the policy to achieve its objectives.

Research report for the VAF policy study, supported by SANREM-CRSP TMPEGS project in Southeast Asia.

sector and the vegetable industry. In aggregate terms, these policies are viewed to be related to VAF. The study was guided by three key questions: 1) What national-level policy incentives exist to promote tree growing and vegetable production?; 2) Are there locally-crafted policies that promote VAF system?; and 3) What are the policy perspectives of local stakeholders in relation to VAF? To address these questions, a review of key national policies and issuances related to tree growing and vegetable production was conducted. Incentive provisions and disincentives to smallholder investment in VAF systems were also examined. A survey of 98 farmers and focus group discussions with policy-makers were also conducted in Lantapan.

3.0 Context: Smallholders and Incentives

Why smallholders?

The seminal work of Richard Tinsley (2004) on smallholder agriculture, presents an analysis of global perspectives on smallholder agriculture, rationalizing the importance of appreciating and understanding the limited resources available to smallholders viz a viz their roles in meeting societal expectations in terms of sustainable production of food and fibre and provision of environmental services.[4] Accordingly, interest turned to small-farm families in less-developed countries because they form the most numerous farmer-group in the world (about 80% of the world's total). However, despite their number, they often do not represent the majority of the cultivated land, and because of their level of production[5], their contribution to national food security is often less regarded. Often, national governments concentrate on large farmers when it comes to national food security and self-sufficiency issues, because large farmers have operational resources to manage their land, are assumed to be easier to work with, and are more able to respond to suggestions (Tinsley 2004). With this, Tinsley (2004) says that "*assisting smallholders has become an effort for enhancing social welfare than substantially increasing national agricultural output".* However, some scholars (also activists) argued otherwise, accusing national governments of underestimating the enormous potential of smallholders to aggregate and meet the requirements of economies of scale of production, if they are enabled to do so.

Tinsley (2004) characterizes smallholders as individual entrepreneurs extracting a marginal living from their limited lands (typically between 1-2 hectares) and resources, and that they should be respected as such. He identifies the key

[4] In his book, "Developing Smallholder Agriculture"

[5] Despite the growing participation of small farmers in the cash economy, their production level is still regarded at "subsistence" level, which means that their production output is without surplus, or is only equivalent to the level of meeting household consumption needs.

determinants that define the various agricultural enterprises that smallholders undertake, namely *physical, economical, social and biological*. In particular, he categorized "government policy" as an economic determinant that defines the economic environment in which smallholders operate. He finds that government policies are normally intended to benefit smallholder producers, but in many cases, have ambivalent results. This happens because government policies normally encompass all other economic sectors, and without careful analysis of tradeoffs, they end up disfavoring one sector over another. Finally, Tinsley (2004) suggests reviewing government policies, particularly on the use of ceiling price policies, to enable small farmers harness their full potential to advance with viable agricultural enterprises.

In the Philippines, Republic Act (RA) 7607 provides for the Magna Carta for small farmers, declaring the rights of smallholders. Furthermore, the Magna Carta declares that as a matter of state policy, smallholders are to be regarded as equal partners in development and therefore should be wholly supported in their economic endeavors. It defines "small farmers" as natural persons dependent on small-scale subsistence farming as a primary source of income and whose sale, barter or exchange of agricultural products not exceeding a gross value of one hundred eighty thousand pesos (P180,000) per annum based on 1992 constant prices. To further this Act, an inter-agency committee composed of the Department of Agrarian Reform DAR), the Department of Trade and Industry (DTI), the Department of Finance (DoF) and the National Economic and Development Authority (NEDA) and headed by the Department of Agriculture (DA), is tasked to conduct periodic review and adjustments of the income level of small farmers to take into account the effects of changes in inflation, devaluation and consumer price index. Additionally, the Philippine Agrarian Law defines smallholders as those cultivating in not more than five hectares. Given this definition of smallholders, the Department of Agriculture in 2003, estimated that small farmers, including fisherfolks constitute over 90 per cent of all farmers and fisherfolks, which is around 21 per cent of the total labor force of the country (DA-ACPC Monitor 2003). Thus, there is ample scope for the government to pay attention to this important sector, because not only that it comprised a significant segment in society, it is also most vulnerable to rapidly changing economic, social, political and environmental conditions.

The meaning of incentives

The concept of 'incentive' is complex, and different definitions have been used in the literature. Its description is as varied as the people who have used it in different contexts. For Giger (1996), incentives refer to anything that motivates or stimulates people to act. Similarly for Sargent (1994), incentives refer to 'signals' that motivate action. In the context of project management, it is synonymously used with

'motivation' and 'reward' (Wideman 2002), but for development projects, incentives are referred as 'bribes' or 'sweeteners' (Smith 1998). Furthermore, in economics, incentives are either 'financial or non-financial factors' that motivate actions (Laffont & Martimort 2001), and is interchangeably used with 'wage', 'compensation' and other forms of material incentives in the medical profession (Grant & Sugarman 2004). In other contexts, it refers to incitement or inducement of action (Enters 2001). These definitions imply that incentives contribute to, or serve as motivation to accomplish a task, which may lead to rewards.

Incentives need not be always monetary. Incentives as motivation also entail emotional aspects such as recognition and self-image. Hence, incentives are divided into two categories: *remunerative incentives* and *moral incentives*. Remunerative incentives are some form of financial or material rewards in exchange of acting in a particular way. Moral incentives on the other hand, are particular moves that are regarded as acceptable, which results to increase in self-esteem or recognition from the community. As shown, the term 'incentive' is used so widely and indiscriminately, that the boundaries of the concept have become blurred. It is only by maintaining a clear view of the context that its boundaries can be better understood and applied in specific setting. Finally, incentives are also used in the policy arena, as ingredients of various types of policy instruments (Enters 1999). For example, the tax concessions enjoyed by Australian farmers for better property management, the benefit-sharing scheme between farmers and the government under the Joint-Forest-Management (JFM) program in India, and the European Union's (EU) Common Agricultural Policy (CAP).

Incentives can either be direct or indirect (Enters et al. 2004). The distinction between the two is quite unclear. In some literature, direct incentives influence return to investments directly, while indirect incentives have an indirect effect in changing the overall situation. For example, subsidised farm inputs (e.g., seedlings and fertilizers) for smallholders are considered direct incentives, whereas general price reduction of farm inputs are considered indirect incentives as they lower the production costs, for instance, to VAF farmers. Enters et al. (2004) further categorized indirect incentives into 'variable' and 'enabling'. Variable incentives are economic factors that may be implemented to affect the net return of an investment. These include price stabilization, maintaining or increasing exchange rates, trade restrictions, regulating interest rates, and taxation adjustments and subsidies. On the other hand, enabling incentives are factors that affect decision-making with greater impact because of wider coverage. These include land tenure and resource use rights, provision of infrastructure, enhancing research and development, and many others. Figure 1 presents the types and examples of incentives.

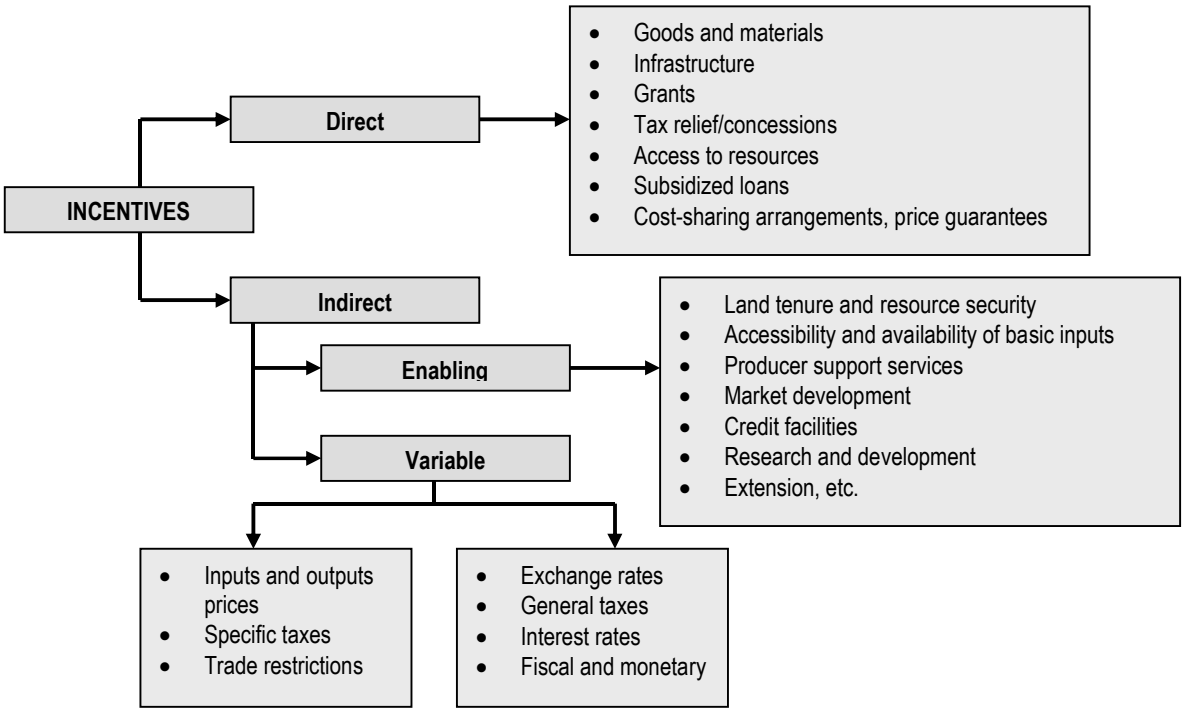

Figure 1- Types and examples of incentives
Source: Enters et al. 2004

Basically, incentives are external prompts of many forms provided by the government through policies and programmes to which farmers respond, either positively or negatively. On the other hand, disincentives refer to those that discourage, hinder, or deter positive responses or actions to occur. In this study, incentives are considered elements of policy instruments that increase the comparative advantage of VAF system, and thus stimulate adoption and investment among smallholders.

4.0 Results and Discussions

4.1 National Policy Setting

Historically, market-based policy instruments have significantly contributed to the physical, economic and environmental changes in the uplands. Since 1970s, the government's policy measures have "incentive" tendencies to encourage participation of the private sector and the civil society in any development undertaking. The following sections discuss the incentives and disincentives of selected national policies relative to tree growing and vegetable production.

A. Policy incentives and disincentives to tree growing

The beginning of social forestry

In 1971, the government launched the Forest Occupancy Program (FOM) to prevent the spread of swidden farming through controlled transfer of resource rights. Forest occupants were given individual parcel of lands not exceeding 7 hectares, so that they become sedentary farmers. In return, farmers were to plant trees and crops and protect the adjacent forestlands. Technology transfer was the focus of FOM (Magno 2001). In the same year, the Family Approach to Reforestation Program was implemented, where forest occupants were contracted for the establishment, maintenance and protection of forest plantations. In 1974, the Communal Tree Farm (CTF) Program was launched, which provided a 25 year lease agreement to participating families who wished to establish tree plantations and agroforestry farms within forestlands.

Some incentives under PD 705

- Ownership rights to planted trees and other products
- Rights to sell, contract, convey or dispose planted trees and products
- Discounted fees, rentals and forest charges
- Tax exemptions and tax credits
- Free government technical assistance
- Assured credit assistance & use of facilities
- Exemption from export log ban
- Market assurance for timber products
- Unrestricted export of plantation products

The above programs started the concept of social forestry, which led to the promulgation of Presidential Decree 705 (PD 705) known as the Revised Forestry Code of the Philippines. The Law called for a nationwide reforestation effort, in partnership with the private sector and civil society, and provided forest communities the right to develop forest areas and to receive government assistance.[6] To further encourage forest communities, it provided a bundle of incentives, which include the right to sell, contract, convey or dispose planted trees and other forest products, and to receive discounts in many payments involved. Forest rents were free during the first five years, and are collected at Php 0.50 per hectare only in the next five years, and Php1.00 in subsequent years. The beneficiary is also discounted of forest charges[7] and exempted from payment of the percentage tax levied, and all other forms of sales tax, municipal taxes and real property taxes. In addition, the beneficiary is prioritized in securing credit assistance from government and non-government financing institutions. Technical advice is also provided by relevant government agencies.

[6] Some scholars and human rights advocates argue that rights to land and resources are "basic" rights, and are not to be considered as "incentives", especially in the case of indigenous peoples whose generations have lived in the area for centuries. In this paper, we do not argue issues surrounding "rights" vs "incentives". Simplistically, we look at rights invoked by law as a higher form of "incentive".

[7] Only 25% of the total forest charge.

Despite this, many farmers were still discouraged because of the disincentives attached to this policy. For example, a farmer can only lease a minimum of 100 hectares to convert to an agroforestry farm and 10 hectares to a tree farm. Obviously, only a rich farmer or an industrial plantation company has the capacity to develop such a large forest area. Even if poor farmers receive credit assistance, the lack of regular cash flow between planting and harvesting, often leads to problems in liquidating the investments. In addition, there were uncertainties about future prices of tree products, especially during the time of harvest. The intention of the policy incentive was therefore dubious, and clearly, poor farmers remained disadvantaged. Nonetheless, poor farmers received free seedlings, which they planted within a manageable area—this was considered a form of direct incentive. To some extent, this helped minimize forest degradation. Soon after, an integrated approach was conceptualized, giving rise to the Integrated Social Forestry (ISF) program.

Integrated Social Forestry (ISF)

The ISF program was launched with the issuance of Letter of Instruction (LOI) No. 1260 in July 1982. The program sought to address upland development issues in a comprehensive way (Magno 2001). It focused on providing land tenure to forest occupants through a Certificate of Steward Contract (CSC). The Contract provides land and use rights over a certain forest area for a period of 25 years, and is renewable for another 25 years. In return, participants are obliged to plant trees on at least 20 per cent of the total area, and are allowed to convert the area into more productive farms, e.g., agroforestry. Farmers were also encouraged to form into local associations and cooperatives.

Incentives under the ISF Program

- Grant of land tenure
- Technical assistance in formulating farm plans
- Priority for wage-based employment
- Settler census to control migration
- Extension and information activities
- Community organizing to ensure participation
- Research and development support

In 1987, the National Forestation Program (NFP) implemented the Forestry Sector Project funded by the Asian Development Bank (ADB) and the Philippine government (Pulhin et al. 2004). Under this program, a contracted forest community is paid for reforesting and maintaining a particular area for three years with an expected survival rate and an average tree height. After the contract period, the area was to be returned to the DENR. Other than wage labour, there is no incentive or accrued benefit for farmers in this program.

In 1989, the Community Forestry Program was implemented with the issuance of Department Administrative Order (DAO) No. 23. The aim was to accelerate the transfer of residual forestlands to organised forest communities by granting them long-term management rights. The program emphasised the crucial role of non-

government organizations (NGOs) in capacitating forest communities with appropriate technologies and alternative livelihoods.

In February 1991, DAO 04 revised the rules and regulations governing the ISF, providing additional incentives to encourage farmer participation. All incomes generated from the land are to be given to ISF participants. Forest products derived from the land are exempted of forest charges, and farmers are provided with technical, legal, financial, marketing, credit and other assistance. Upon expiration of the Contract, farmers retain the right to avail of subsequent arrangements covering the land. They are also compensated for any permanent development invested during the contract period, e.g., trees planted.

Additional incentives under the ISF program

- All incomes derived from the land are given to the participant
- Forest products are exempted from forest charges
- Provision of government technical, legal, financial, marketing, credit and other assistance
- Assistance from government agencies, NGOs and private organizations
- Compensation for permanent investments
- Retention of rights to avail subsequent arrangements over the land.

Foreign donors such as the Ford Foundation, World Bank, USAID and GTZ funded many of the projects implemented in line with the ISF program (Pulhin et al. 2004). These projects focused on small-scale agrofrestry to meet the livelihood needs of smallholder farmers, while addressing environmental degradation. About the same time, some environmental NGOs began their pioneering work in forest regeneration and agriculture in the uplands. The three main efforts were a mission in southern Mindanao adopting the Sloping Agricultural Land Technology (SALT)[8], the work of World Neighbours in hilly farming communities in the central Philippines, and a mission by Pastor Rice in Nueva Viscaya (Pulhin et al. 2004). Beginning in 1980s, the need to address upland poverty through promotion of livelihood options began, in addition to environmental protection.

Decentralisation

The passage of Republic Act 7160, known as the Local Government Code of 1991 paved the way for decentralization in the Philippines. The aim was to strengthen the capacity of local government units (LGUs) to share with the national government, the responsibility in maintaining ecological balance within their political jurisdiction. In effect, ISF projects were devolved to LGUs, except for

[8] The Mindanao Baptist Rural Life Centre (MBRLC) in Davao del Sur introduced Sloping Agriculture Land Technology (SALT) in the 1980s. SALT is an elaborate and highly specific package of soil conservation and crop production technologies, based on contour hedgerows, that involves 10 basic steps and four alternative versions (SALT I to IV). The MBRLC has disseminated SALT through.

model ISF sites and communal forest areas exceeding fifty square kilometers, which remained under the supervision of the DENR.

For example, in 1992, the Bukidnon province in the southern Philippines, assumed DENR's responsibility in managing many ISF projects. The provincial government provided general supervision, management and implementation of devolved ISF projects covering 14,000 hectares, and involving 5,523 beneficiaries (BENRO 1993). The provincial government then, created the Bukidnon Environment & Natural Resource Office (BENRO) to implement ISF projects. Thereafter, the Bukidnon Environment Small-Scale Tree Farm Project (BEST) project was initiated by BENRO, which provided financial and technical assistance to ISF farmers. In return, farmers, were required to devote at least 20 per cent of their allocated lands exclusively for tree farming.[9]

Simultaneously, the Forest Land Management Agreement (FLMA) was implemented. Forest communities that have successfully complied with DENR's reforestation contracts were given land use rights for 25 years, renewable for another 25 years. However, in exchange of harvesting privileges in the forest areas, farmers were to refund the government for its initial investments, and have to reforest the harvested areas. NGOs were also mobilized to provide training assistance to forest communities. Despite this, many forest communities did not benefit from this program because of the large investment needed in harvesting, transporting and selling harvested trees.

Community-Based Forestry

The 1990 Philippine Master Plan for Forestry Development cited long-term policy recommendations. The "Community-Based Forest Management" or CBFM was then, adopted as a national strategy to ensure sustainable development of forest resources, following the mandate of the Philippine Constitution.[10] The CBFM program unified the different forestry programs and projects implemented in the past two decades,

[9] The incentive given to the tree planters was in the form of direct credit assistance through the award of negotiated family or community contracts. The provincial government's financial assistance was P7,500.00 per hectare and the farmer provides the labour component for a period of three years. P1,500.00 was intended for project management and supervision while the P6,000.00 was a direct assistance provided to the tree planter in the form of cash and/or tree planting inputs. This was released in three instalments: 1) Seedling production (0-6 months - P2,000); 2) Plantation establishment (7-18 months – P2,000); 3) Care and maintenance (26-30 months – P2,000). The last project was released in 2002. The total amount released to the tree planter is treated as a long-term loan, which is paid on or before the 10th year of operation. Repayment is in kind, in the form if 15 stumpage with a required height and diameter.

[10] Referring to social equity in Sec. 1, Art XII.

and were implemented using government funds and loans from ADB and the Japanese Bank for Economic Cooperation (JBEC).

CBFMA is an agreement entered between the government and local communities, represented by its People's Organization (PO). It has a term of 25 years, and is renewable for another 25 years. It provides organized communities with tenurial security and incentives to utilize and develop the area on the condition that the area is protected and managed according to the principles of sustainable forest management. A CBFM farmer is exempted from forest rents and charges on timber and non-timber products harvested, and are entitled to receive all incomes and proceeds in the area. Agroforestry is promoted as the most appropriate land use that can respond to the problems of shifting cultivation in CBFM areas (Nera 1997).

Furthermore, CBFM communities are assured of proper information and consultation on all government projects to be implemented in the area, and are prioritized in all available assistance. They are also authorised to enter into agreements or contracts with private or government entities to develop the area, provided that the existing agreements are faithfully observed. However, many of the awarded CBFM areas are either logged-over areas, grasslands, or relatively forested—and all these require huge capital to develop. The disincentive to small farmers is that, the initial technical and financial support provided by the government was largely inadequate to make them self-sufficient.

Incentives under the CBFM Program

- Security of tenure
- Right to use and manage the resources within the area
- Exemption from land use rental
- Exemption from forest charges
- Right to be consulted on government projects in area
- Authority to enter into contracts or agreements
- Preferential access to assistance and information
- Right to receive all income and proceeds of the area
- Right to contract with private entities
- Right to contract with government entities

Upland Agroforestry Program

The Social Forestry Movement in the Philippines was promoted in 2004. The Movement promoted agroforestry as a strategy for upland development, and highlighted the development of high-valued tree crops and non-timber forest crops in the uplands. This served as precursor to the Upland Agroforestry Program, which was launched in 2005, with DAO 25 providing the implementing guidelines.

As in previous policy instruments, the Upland Agfororestry Program aims to promote equitable distribution of opportunities,

The target area for upland agroforestry development is 4 million hectares, which includes:

- Upland cultivated areas
- Grasslands
- Brushlands
- Wooded grasslands

income and wealth in the development of open and unproductive forestlands through the adoption of agroforestry systems that are best suited to the biophysical characteristics of the area. However, the disincentive is that, the smallest area that can be applied under this program should not be smaller than 50 hectares. Further, the applicant is required to submit a proof of financial and technical capability to undertake agroforestry development, and will have to incur the cost of survey and mapping, as well as in formulating agroforestry development plans. In the end, DENR is entitled to a share of the gross revenue and other benefits from the agroforerstry farm. Given these requirements, it is not possible for poor farmers to benefit from this program. The intention of promoting widespread implementation of agroforestry under this program is thus, selective.

Evolution of policy incentives in the forestry sector

In the ensuing discussion, policy incentives to tree growing had evolved from direct to indirect (Figure 2). The provision of direct incentives was common from 1970s to 1980s, but beginning in late 1990s, the notion of incentive gradually shifted to more indirect ones, such as comprehensive land and resource use rights through various land tenure instruments.[11] Security of tenure is perhaps the most significant incentive provided to smallholder farmers. Indirect "enabling" incentives, e.g., land tenure have created an attractive environment for investments towards 2000. Early government efforts in engaging communities focused on providing direct material and financial incentives, e.g., distribution of free planting materials and fertilizers, subsidized loans, and wage-based employment and contracts. Giving free inputs was favourable to government because they are straightforward incentives, and are easy to monitor. They are also less complex compared to grants and subsidized loans, which involve transaction costs. However, material incentives such as free seedlings do not always stimulate planting as effectively as cash grants because the latter is more attractive and provide more flexibility than bulky material inputs. However, in general, direct incentives offer more scope for abuse— free seedlings and vegetable inputs were resold, while cash grants were used for other purposes. Cash grants and concessionary loans became popular during the ISF period, which was followed by another direct financial incentive in form of "tax concession". Tax breaks have been relatively successful because they help to bridge the long gap between the initial plantation investment and the harvest revenue collection. However, only rich farmers and industrial plantations benefited from cash grants, concessionary loans and tax holidays.

[11] Land tenure is considered as an indirect "enabling" incentive.

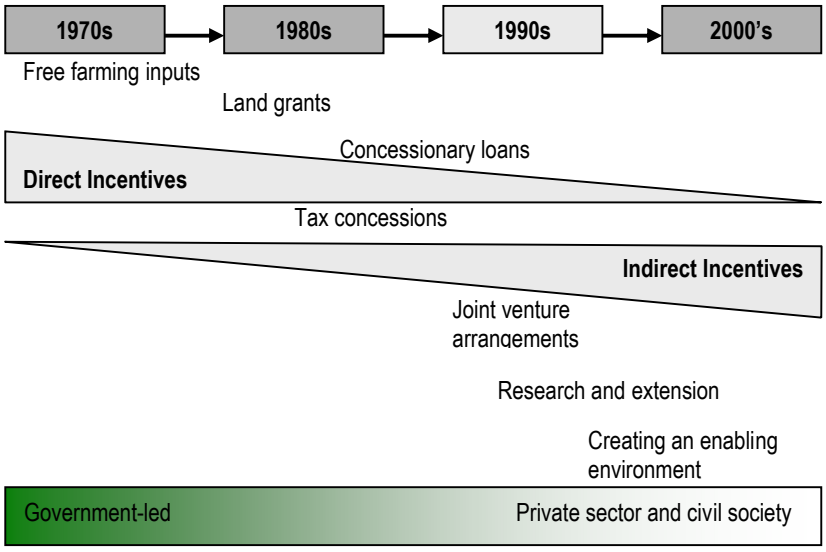

Figure 2- Shift from direct to indirect incentives

Learning from government experience, the private sector (NGOs, etc.) picked up where the government failed. The private sector's involvement gradually changed the use and provision of incentives, which were perceived to be more of a dole out, e.g., free inputs, to grants and loans, to tax concessions and joint ventures, and finally, to a focus on creating an enabling environment, leading to more indirect incentives.

In summary, the policy environment at the national level is by and large, conducive to widespread investment in reforestation, farm forestry or agroforestry development. Without hinting on the government's inefficiency in policy implementation, the dynamic shift from direct to indirect incentives manifest a reasonable dedication on the part of government, to improve its policy practice. However, disincentives and or policy gaps remain, due to the inherent weakness of some policies[12] and the ineptness of government to sustain implementation. The underlying reason for this is the overall weakness of the state, perpetuated by its political economy—this however, is beyond the scope of this study. Finally for smallholders, the key disincentives in tree growing are the lack of market incentives at both national and international levels, and the complex processes and transaction costs involved in obtaining permits for cutting, transporting and processing timber. The low timber prices, lack of locally-available planting materials, insecurity of land tenure and land scarcity aggravate this. If these are not effectively addressed, tree growing will remain a risky investment for smallholders.

[12] Some policies are by nature "selective", favoring more to rich farmers and commercial growers than to smallholders.

B. Policy incentives and disincentives to vegetable production

Several policies have been formulated to support the agriculture sector, among others, the Seed Industry Development Act, Price Act, Export Act, Plant Quarantine Law, Crop Insurance Act, High Value Crop Development Act and the Agriculture and Fisheries Modernization Act. Similar to the tree sector, the vegetable industry is also undergoing changes brought about by these national policies and changing international trade policies. These changes entail both opportunities and challenges, particularly for smallholder producers. Smallholder producers in particular, are adversely affected, as market requirements in terms of product standards have become more stringent and trade barriers and trade-distorting support in agriculture remain. The Department of Agriculture conducted assessments and consultations with the private sector and identified the following challenges and opportunities in promoting high value crops.[13]

1. Lack of appropriate and quality planting/genetic materials;
2. Need to upgrade and adopt viable and sustainable technologies for both fresh and processed products;
3. Huge post-harvest losses due to lack of appropriate post-harvest handling facilities; cold chain distribution systems as well as processing and packaging technologies and facilities;
4. Huge marketing costs due to high cost of transport and handling;
5. Imperatives of matching government support services with private sector needs;
6. Inadequate market information particularly on gaining entry to local national and export markets;
7. Need to expand protocols with foreign markets, particularly removing non-tariff trade barriers;
8. Need to develop internationally acceptable grades and standards as well as sanitary and phytosanitary measures;
9. Need for focused and aggressive domestic and export market promotions;
10. Need to expand and institutionalize linkages between and among producers, financiers, processors/marketers and consumers;
11. Urgency to strengthen cooperatives through incentives and opportunities that draw them towards achieving the economies of scale required by buyers, and forging producer linkages with users of high value crops;
12. Need for favorable competitive foreign exchange, interest, wage and taxation policies;

[13] Based on the High Value Crop Development Act of 1995, high-value crops (HVC) include crops other than traditional crops, which include, but are not limited to the following: coffee and cacao, fruit crops, root crops, vegetable crops, legumes, spices and condiments, and cutflower and ornamental foliage plants.

13. Exigency of establishing consumer protection policies covering food safety, manufacturing, and distribution standards;
14. Need to work within or make progressive and investment-friendly, the rules and regulations governing the Comprehensive Agrarian Reform Program (CARP) and devolution of public administration; and
15. Need for responsive government bureaucracy and governance to private sector needs

As part of government's risk management strategy in the agriculture sector, the Crop Insurance Law (PD 1467) was enacted in 1989 to protect agricultural producers against loss of crops, livestock and agricultural assets on account of natural calamities, plant pests and disease, and other hazards. The crop insurance coverage includes cereals and grains, tobacco, and high value commercial crops (e.g. temperate vegetables). Later, it expanded to credit guarantee, loan repayment protection, and a comprehensive life and accident insurance for agricultural producers and stakeholders. The underlying goal is to change the risk-averse attitudes of farmers, and encourage them to invest in new technologies that help increase national productivity. This policy embodies direct incentives to vegetable growers and farmers in general, but the disincentive remains in the inability of small farmers to cash-out the premium payment. The Philippine Crop Insurance Corporation (PCIC) administers this program, but with very little capital, a good proportion of the targeted 5.2 million poor farmers in remote areas have not been served, and instead, it focused on farmers patronizing in formal credits with financing institutions such as Land Bank of the Philippines. Although unintended, the Crop Insurance Law appears to be selectively serving richer farmers that availed the formal credit system, in the same way, as government subsidized credits are favorable to large or richer farmers, because small farmers do not have the capacity to comply the credit requirements.

The vegetable sector is also covered by the Seed Industry Development Act of 1992, which supports the development of the seed industry by encouraging the private sector to engage in seed research and development, and in mass production and distribution of good quality seeds, and protects the local seed industry against unfair competition with imported seeds. Key incentives presented in this policy are: 1) individuals, farmers' organizations, cooperatives, and corporations wholly owned by Filipinos are entitled to technical assistance from the government, including training in seed technology, procurement of seeds, and access to research results; 2) imported technical equipments used in seed processing, sowing, meristem culture, storage and quality testing by individuals, farmers organizations, cooperatives and corporations wholly-owned by Filipinos shall be exempted from duties and taxes during the first five (5) years of operation; and 3) expenses for research, development and extension activities of private Filipino seed producers shall enjoy a two hundred percent (200%) deduction from their gross income for the first five years of operation. This

policy is obviously more applicable to richer farmers and entrepreneurs engaged in export/import business. The gap in policy implementation is that, the services of the implementing government agency did not trickle down to small farmers in rural areas. Also, there is no incentive for using locally-innovated seed processing equipments, which can be developed by smallholder farmers if enabled to do so.

The General Agreement on Tariff and Trade (GATT) aims to open market access worldwide and reduce distortions in world commodity prices. It was expected that exporting countries, like the Philippines, will benefit through greater trade opportunities and better agricultural incentives. It promises to pursue economic liberalisation of both developed and developing countries. For the agriculture sector, the major areas that GATT has promised to work on are: 1) expanding market access; 2) reducing distortions in agricultural production; 3) minimising international dumping of agricultural exports; and 4) removing biases in sanitary and phytosanitary (SPS) measures (David 1994). For the Philippines however, only the expansion on market access and harmonization of SPS apply.

There were many apprehensions from different sectors when the Philippines joined WTO in 1995 (Reyes 2007). According to Pascual and Glipo (2002), the Philippines' membership into WTO only imperilled the country's food security and exacerbated long-running social inequities. RA 8178 on Agricultural Tariffication provided for the replacement of quantitative restrictions on agricultural products with tariffs--the initial bound rate for sensitive products was 100 per cent, but was then, reduced to 40-50 per cent as the final bound rates in 2004.[14] With this, the entry of imported goods outpaced the products of small farmers; hence RA 8178 repealed the aim of the Magna Carta of small farmers, which is to protect the products of small farmers. While technocrats argued that the Act will open opportunities in the global market, and will provide benefits to the vast majority of farmers, some farmer groups were vocal in opposing the move, arguing that since poverty is highest in the agriculture sector, the government's decision was premature, in that, poor farmers have so much to lose in a liberalised economy. In response to these arguments, the government provided various types of incentives such as provision of irrigation, farm-to-market roads, post-harvest facilities, credit, research and development, marketing infrastructure and information, training and extension services and other support to the agricultural sector.

More than 10 years had pass since the Philippines joined WTO, but the agriculture sector is still stifling its ability to increase its contribution to the national economy. Agricultural imports have outpaced exports, transforming the country into a net food importer. For vegetables alone, imports have grown sevenfold from 1996 to 2002 (Macabasco 2004), putting competitive pressure on smallholder producers.

[14] Corn, sugar, onions and garlic are considered sensitive products.

This is due to the reduction of tariff rates and the changing market dynamics of the vegetable supply chain. Imported vegetables are said to be cheaper by 30-50 per cent compared to locally-produced ones--they are better packed and generally, of better quality. These attributes make them more attractive to local consumers. Another challenge in the vegetable sector is in responding to non-tariff barriers in terms of environmental and health requirements and SPS measures, which are impeding local products to enter the international export market.

With a tottering agriculture sector, the Agricultural and Fisheries Modernisation Act (AFMA) was signed into Law in 1998.[15] It maintains the government's commitment to global competitiveness by providing for the modernization of agriculture and fishery. It promotes countryside growth by providing credit assistance to small farmers and fisher folks, and supports research and development, particularly on developing irrigation and water management technologies. Research results are to be disseminated through formal and non-formal education extension and training. Furthermore, it promises to provide information and marketing support services to rural areas.

Major provisions in AFMA

- Provides credit assistance to small farmers and fisher folks, particularly women
- Promotes R&D, particularly on irrigation
- Extension services
- Information and marketing support services

It also provides for the identification of Strategic Agriculture and Fisheries Development Zones (SAFDZ). However, many SAFDZ plans were not materialized because they were mostly developed without sufficient stakeholder consultation, and were extremely expensive to implement without external funding. In the end, AFMA was not able to fully take-off on the ground as government could not even meet the annual budgetary requirements of the Department of Agriculture (Pascual and Glipo, 2002). To encourage agricultural modernization through private investments, AFMA was amended through RA 9281 in 2004, providing for an extension of tax incentives to producers who import agricultural inputs and equipments. The extent to which this has been applied remains to be seen, but definitely, poor farmers did not benefit from the amended Law.

A previous legislation, Republic Act 7900 on High Value Crops Development (HVCDA) promotes high value crop production and provides the market orientation of developing the industry. In support of HVCDA and AFMA, President Gloria Macapagal-Arroyo launched the program, "Gintong Ani - High Value Commercial Crops Program" (GA-HVCCP), which outlines the national framework for harmonizing local initiatives with international market opportunities. The program adopts a major shift towards market-oriented production systems by introducing the

[15] Republic Act No. 8435

Commodity Producers Linkages with Users (Commodity-PLUS) as the basic reference for addressing the gaps in the commodity marketing systems. This includes commercial testing and technological demonstration of integrated systems[16] and privatization of post-harvest and processing facilities.[17] In addition, the program adopts a "home consumption-led" strategy to promote backyard production of fruits and vegetables. Fruits and vegetables were identified as a cheap source of healthy food that improves the nutritional status of Filipino families. While there are specialty fruits and vegetables for high end markets, there are more that can be easily grown for home consumption and or marketed to the average consumers (Department of Agriculture 2006). The five program components of GA-H VCCP entail many forms of direct and indirect incentives to vegetable producers.[18] The program however, requires huge investments and the only way to make this possible, is to generate counter-part funds from LGUs.

Five program components of GA-H VCCP

1. **Policy Reform, Market Development and Promotion**- policy and business feasibility studies, product development and packaging, technology/trade missions, trade fairs, market linkages/contracts/Joint Venture Agreements, and manufacturing initiatives.
2. **Infrastructure Support**- irrigation, terminal markets/trading posts, post harvest facilities, laboratory testing facilities.
3. **Investment and Financing** from private and government financing institutions.
4. **Technology Development, Training, Extension, Communication Support**
5. **Program Advocacy, Information Networking and Dissemination**

Moreover, the guidelines on Good Agricultural Practices (GAP) were adopted to encourage agricultural exports (FAO 2003; Hobbs 2003).[19] Basically, GAP certification involves the setting of standards on agricultural producers to promote sustainable agriculture on the basis of environmental protection, improved food quality and safety, and improved

Incentives under GAP

- Premium price
- Access to market/supply chain
- Product differentiation
- Stabilization of yield/revenue
- Reduction in storage losses
- Reduction in wastage
- Increased in farm assets
- Protection against market externalities
- Subsidies
- Skills improvement
- Recognition

[16] This includes establishing techno-demonstration and commercial testing of agro-based oriented enterprises, post harvest and processing technologies. These can be transferred to the private sector including cooperatives under the various privatization modalities.

[17] Facilities may be established and privatized under an appropriate modality from among the following: Build-Operate and Own (BO), Build-Lease and Transfer (BLF), Build-Transfer and Operate (BTO), Build-Operate and Transfer (BTO) Contract at and Operate, Develop, Operate and Transfer, Rehabilitate, Operate and Rehabilitate, and Own and Operate.

[18] Including farmers that plant fruit trees classified as "high value" crops.

[19] GAP standards were initially developed by the FAO Committee on Agriculture.

production techniques. It aims to put premium value to standard products, open up the export market, and improve the supply chain infrastructure. There are direct and indirect incentives attached to GAP, but there are also apprehensions that the newly set international guidelines will marginalize small producers because of the high costs involved in meeting GAP standards.

In 2005, the Department of Agriculture passed the guidelines for the Certification of GAP for fruit and vegetables (Administrative Order No. 25). Compliance to GAP "standards" pertains to farm structure, environmental maintenance, farming practices and management, and diligent observation of the regulations on the certification. Upon compliance of the above, the producer can then apply for a GAP certificate, and can stamp the official mark, 'GAP on vegetable farming' on the products. The direct benefit of the producer is obviously the potential value-added opportunities and greater access to international markets. However, smallholders are constrained in complying with GAP standards because of the associated costs to adopting new production techniques, the additional labor and record-keeping requirements, and the use of more expensive environment-friendly inputs. Documentation also poses a problem because many smallholder farmers are illiterate. Without a comprehensive support system, meeting GAP standards by poor farmers will thus remain an exemption rather than a rule.

In addition to GAP certification, organic agriculture was promoted to put premium-value to organically-produced agricultural exports and local consumption products.[20] The potential economic and environmental benefits of organic farming are widely known to farmers, but generally, poor farmers are unwilling to lose their income when yields fall, during the initial adoption of organic farming techniques. Currently, the organic farming sector remains relatively small covering only 2000 hectares or .02 per cent of the total agricultural area (Vossenaar & Wyner 2004), making the county, a net importer of organic products. An obvious gap of the policy instrument on organic farming is that, it espoused the policy intent and the potential benefits of organic farming to producers, but it did not provide direct incentives and support to promote wider adoption of organic farming techniques.

In sum, the policy environment of the vegetable sector is rapidly transforming due to changing international trade policies, but similar to the tree sector, smallholder vegetable producers are still lagging behind the industry, despite their significant presence. The main disincentive to smallholder producers is the high costs across the market value chain. The main challenge is removing the policy barriers not only at the level of the producer, but within the whole vegetable enterprise.

[20] Through EO 481 issued in 2005.

In general, the policy intentions for vegetable production and tree growing are noble but the lapses, inconsistencies and poor implementation reflect a policy environment that is frail and pathetic, perpetuating a form of selective development.

4.2. Local policies and perspectives of stakeholders in Lantapan

A. The Lantapan municipality

Lantapan is located in the western part of Bukidnon Province in the southern Philippines with an average elevation of 600 meters, which increases to a maximum of 2, 938 meters as one proceeds northwest. About 70 per cent of the area has slopes greater than 10 per cent. The average annual rainfall is 2,470 mm, and air temperature and solar radiation decrease with elevation. Lantapan's population revealed a steady increase since the 1970 census. In 1995, the National Statistics Office (NSO) recorded a total population of 36, 943, which increased to 42, 383 in 2000. Given this, it was projected that the present population will triple in the next 15 to 20 years.

Lantapan harbors two important ecosystems. The left bank of the Manupali River bounds Lantapan on the south, and a major protected area, the Mt. Kitanglad Range Natural Park (MKNRP) on the north. Several sub-watersheds drain from Mt. Kitanglad Range across the extensively cultivated farmlands to the Manupali River. The river runs into a network of irrigation canals operated by the Manupali River Irrigation System (MANRIS). The whole system ultimately drains into the Pulangi reservoir, utilized for hydroelectric power generation by Pulangi IV; the largest hydroelectric power facility of the National Power Corporation (NPC) in Mindanao, located about 50 km southeast of Lantapan. Lantapan is thus wholly contained within the Manupali watershed, which was declared "critical" by the Department of Environment and Natural Resources (DENR), making it subject to conservation and restricted development in 1992.

Lantapan's pattern of agricultural expansion involves the replacement of forest and permanent crops by annual crops, and the spread of annual cropping in high altitudes and steeply sloping areas, pushing back the forest frontier. This causes dramatic increase in soil erosion rates, causing further land degradation. The rural economy remains agricultural, with 90 per cent of the households depending on smallholder farming. The proliferation of agribusiness, particularly large banana corporate farming, utilizing prime agricultural lands and absorbing the local labor force has pushed smallholders to farm in much smaller plots, and in less productive and more environmentally fragile areas. Figure 3 shows the stakeholders analysis of the threats to the resource-base in Lantapan.

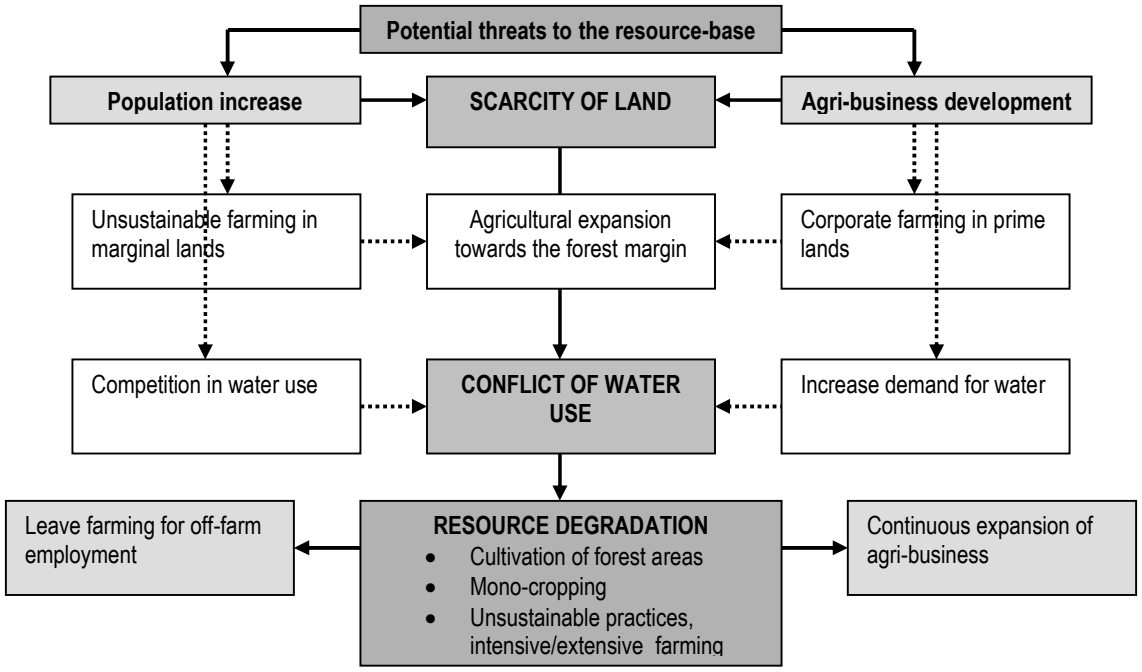

Figure 3- Analysis of threats to Lantapan's natural resources

B. Local policy setting

Both ISF and CBFM programs were implemented in Lantapan.[21] The Local Government also enacted local environmental policies, albeit the implementation of these policies is somewhat weak. Five local policies were found to be related to VAF but in general, these policies did not have clear incentives (Table 1).

Table 1- Local policies supportive to VAF systems

Municipal Ordinance	Date Legislated
Requiring all farm tillers and all farm land owners to adopt contour farming and agricultural land technologies in sloping areas	January 2001
Regulating bio-prospecting activities in the Mt. Kitanglad Protected Area, particularly within the vicinity of the Municipality of Lantapan, and for other purposes	October 1999
Prohibiting garbage disposal (household waste, dead animals and hazardous chemicals) in rivers and creeks	September 1999
Imposing fines/penalties for acts, which endanger the environment such as the conduct of illegal logging/cutting within Lantapan in support to illegal logging law of the Philippines	July 1996
Sanitary inspection of all vegetables transported from Lantapan to other areas	

Source: Lantapan Legislative Council, 2006

[21] Lantapan is a recipient of ISF and CBFM programs by virtue of the Local Government Code.

Article XI of the Codified Local Ordinances of Lantapan (1998-2001) mandates the inspection of vegetables transported from Lantapan to outside areas. Section 191 states that "*all vegetables transported outside the municipality must be subjected to a sanitary inspection, and must be free from chemical/pesticide residue or any other preservatives that are unfit for human consumption.*" This is the single most policy that is directly associated with vegetable production and marketing.[22] A local policy that is could be related to VAF system is the restriction of garbage disposal in rivers and creeks, particularly empty chemical containers from vegetable farms. Cleaning knap-sack sprayers in rivers and creeks are also not allowed. Next to contour farming, this Ordinance is popular among the interviewed vegetable farmers. These policies however do not have incentive provisions, so farmers have negative impressions, particularly the inspection of transported vegetables. Interviewed farmers commented that crop inspection and imposition of penalties should not be limited to vegetables, but should be applied to all crops including sugarcane, rice, corn and coffee.

Incentive under Ordinance No. 00-65

Section 3- Entitlement of Assistance
All farmers practicing contour farming are entitled for any funding assistance from government programs and other financial institution in support to his livelihood, upon recommendation of the monitoring group.

The only local policy with an explicit incentive provision is Ordinance No. 00-65, requiring all farmers to adopt contour farming. It contains an "entitlement of assistance" as incentive for adopting contour farming. At the village level, resolutions were enacted to enforce this Ordinance. In Sungco for instance, this Ordinance was used as basis for recognizing and rewarding model farmers adopting contour farming.[23]

Clearly, at the local level, the policy environment on vegetable farming, tree growing or agrorofestry is less-encouraging. There are plausible observations behind the complacent attitude of local officials. Accordingly, because of the presence of numerous projects in Lantapan, including the ISF, CBFM, the 10-year Asian Development Bank (ADB)-funded Muleta-Manupali Watershed Rehabilitation Project, and the longest-running USAID-funded SANREM project[24], local

[22] The inspection of vegetables is conducted at the inspection post in the municipal market. Sanitary inspection fee is P0.25 per sack. A special Task Force was created to conduct monitoring and inspection of vegetables.

[23] The village government holds an annual search for model farmers during its Charter Day celebration, where cash gifts are given to winners. Non-adopters of contour farming are not recommended for any form of financial or material assistance from government program and other institutions, and are not issued village clearances.

[24] Sustainable Agriculture and Natural Resource Management-Collaborative Research Support Program, a USAID-funded project, implemented by a consortium of US-based universities, international, national and local partners and NGOs, implementing research and development activities in the Manupali Watershed since 1993.

government officials did not seem to recognize the need for local policies, to scale up wider adoption of tree farming or agroforestry. In the case of Lantapan, the role of policy was offset by external agencies, but whose efforts are often transitory, as they are not likely to provide a long-term local presence; so, it is crucial for local governments to focus on developing a long-term strategy or policy mechanism, to sustain or enhance these efforts once external agencies withdraw their support.

Farmers' awareness on VAF related policies

Generally, farmers in Lantapan are highly aware about NRM-related policies. In particular, farmers were aware on policies related to water management (70%), tree planting (68%) and soil conservation (58%), while policies related to vegetable production were least known (8%), obviously because there were few at the national level, and were almost none locally. Awareness on these policies can be attributed to the ADB-funded watershed management project in the early 1980s, where local people were exposed to tree planting, as they were hired as wage labourers to grow and plant seedlings. The activities of SANREM-CRSP beginning in 1993 were also recognized to have reinforced the apparent stock of human and social capital on watershed management. SANREM researchers employed participatory research and development approaches, exposing farmers to watershed issues and training them on soil and water conservation technologies.

Information on new policies is usually accessed through village-level meetings, where new policies are introduced and the residents' endorsement is sought.[25] Attendance in regular village meetings thus, provides opportunities for villagers to be informed, or consulted regarding a policy proposal. Interviewed farmers believe that their voices are important in the policy development process, and their contributions are crucial to successful policy implementation. The benefits derived from NRM policies were the acquisition of new technologies and improvement of farming system (44%) and participation in trainings and seminars (24%).

Majority of interviewed farmers mentioned the importance of incentive-based policies to promote better practice, adoption and investments in VAF system. Respondents ranked the policies that promote widespread adoption of VAF system. The top-three important policies were: 1) technology promotion; 2) improvement of marketing system; and 3) improvement of local extension support system (Table 2). The intractable links of these policies to effective local extension is interesting,

[25] Referring to "barangay" assembly meetings, which are usually held on a monthly basis in the barangays. The barangay assembly serves as a platform for information dissemination, consultation, planning and decision-making. Under the Philippine Local Government Code (1992), the policy development process includes a "public hearing/meeting", to provide opportunities for local people to deliberate on, provide inputs, and seek support of the proposed policy. Public hearings are usually conducted in conjunction with barangay assemblies where higher attendance of villagers can be expected.

pointing out the crucial role that local governments play in stimulating VAF investments by smallholders. Previous studies of Coxhead et al.(2005) on the effects of markets and price policies on land use decisions in Lantapan support these findings. They mentioned that the most effective instruments for promoting sustainable agriculture in the uplands would be interventions such as technology transfer, extension and education. Results of a parallel study on the market issues of vegetable production in Lantapan conducted by researchers from De La Salle University also support the above findings.[26] They found the following constraints to marketing vegetables: 1) lack of access to market information; 2) inability to control market pricing; and 3) high cost of hauling and trucking. Furthermore, during follow-up interviews and focus group discussions, farmers and policy-makers identified corresponding incentives to each policy, which can be expected to stimulate smallholder investments in VAF systems (Table 2). In this case, incentives are viewed as elements of policy instruments-- without which, the desired action of change among smallholder farmers will probably not occur.

Table 2- Policy ranking by respondents and related incentives

Rank	Policy	Related incentives to promote VAF system
1	Promotion of sustainable farming technologies	Accessibility to information and training on new technologies
2	Enhancing marketing system and price stabilization	Market information, linkages and network, price monitoring, and technical assistance on enterprise dev't
3	Improving the Municipal Extension System	Accessibility to agricultural technicians for technical assistance and facilitation
4	Provision of subsidies and tax concessions	Subsidies or tax concessions as incentives for adopting good agricultural practices
5	Provision of good infrastructure support	Farm to market roads, vegetable warehouse with complete facilities
6	Provision of credit assistance	Credit assistance in cash or in kind; reduced transaction costs in processing credits and loans
7	Provision of land and resource use rights	Support for land survey and obtaining land use rights, and registration of planted trees
8	Effective institutional arrangements	Mechanisms in-placed for systematic networking, and dialogue with other stakeholders and service providers
9	Provision of financial or material support	Cash or in-kind gifts, recognition, and support for adopting good practices

Guiding principles and policy considerations in VAF

In a policy dialogue, stakeholders identified some guiding principles with respect to VAF policies—these policies should be: 1) incentive-based; 2) inclusive, rather than selective; 3) effectively communicated; 4) complemented with effective programs;

[26] The market study was conducted as part of a USAID-funded SANREM project in Lantapan on Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds.

and 5) immediately enforced. Furthermore, the stakeholders suggested the following policy considerations.

- Local policies on forestry and agriculture that support adoption of VAF system.
- Establishment of vegetable and farmer clusters to promote product specialization and provide ease in marketing.
- Provision of incentives (e.g. subsidies, tax reduction, awards, children's scholarships, etc.) to encourage adoption and investment of smallholder farmers to sustainable VAF systems.
- Categorize farmers by type of crops planted, land tenure rights, cropping arrangements, adopters and non-adopters, etc. to ensure fair provision of incentives.
- Regulate land rental arrangements, especially in buffer zones, to ensure that soil and water conservation technologies are adopted.
- Assist smallholder VAF farmers in securing tenurial rights (e.g. CBMFMA, etc.) to encourage long-term investment on their lands.
- Strengthen and intensify the local extension program to promote VAF system.
- Building the capacity of smallholders to develop farm enterprise, network with other service providers, and link to markets.

Interview results at the local level show that smallholders are interested in policies that directly affect them. Access to policy information and involvement in the formulation process has been limited, yet smallholders believed that they can make a meaningful contribution in policy formulation. Notwithstanding the importance of national level policies, locally-formulated policies are preferred by smallholders, where responsible agencies can be easily approached, and mid-course actions can be applied to ensure smooth implementation. Where the benefits of nationally-crafted policies do not trickle down to the local level, local policies are needed to fill-in this gap. In many cases, local level policies are more appropriate for identifying or negotiating for incentives, making the incentives more realistic and pro-poor. The advantage is that, local policies can be formulated with greater flexibility. Locally-crafted policies also promote local ownership, cost-effectiveness, and efficiency.

5.0 Major Policy Gaps

Clearly, the policies governing the tree sector and vegetable industry are insufficient in stimulating smallholder investment in VAF system. Despite the on-going policy transformation, huge gap exist between the policy intention and the policy in practice. Often, national-level policies have unintended negative effects because their

intentions are too general, if not ill-defined[27]; on the one hand, they protect or provide incentives to one sector, but on the other hand, they restrict, undermine or create disincentives to another sector. For example, the policy intent of the Magna Carta for smallholders is laudable, but the succeeding policy instruments are partial to the needs and interests of smallholders. The issue is that, the incentive provisions are not necessarily exclusive to the targeted sector, hence richer farmers or large holders can easily free-ride and benefit more than the smallholders. Not surprisingly, without proper analysis of tradeoff, national-level policies tend to undermine one sector over the other, promoting a form of selective development.

Several gaps also exist in policy implementation, in terms of communication, funding mechanism, and operationalization. Many national-level policies are either not communicated or poorly disseminated at the local level.[28] Policy implementation suffers from structural and funding constraints; for instance, the "Gintong Ani" program was implemented through the regional field offices of the Department of Agriculture with super-imposed structures, but was hampered with inadequate funding. Similarly, the performance of the Crop Insurance Program was fluctuating since it received limited funding than was promised by the national government—this defeated the purpose of serving small farmers in rural areas. Another issue is the weakness of national level policies in addressing local specificities. National level policies provide a general framework and enabling environment, but are not able to fully address the complex, diverse and unique conditions of smallholders.

6.0 Conclusions

The policies governing tree-growing and vegetable production have undergone major changes within the last several decades. In general, or at least in theory, the policy environment is supportive of the development of VAF system, but the benefits to smallholders remain limited. Incentives for smallholders, albeit limited exist; correspondingly, disincentives persist. Often, national policies convey generic incentive packages that are subject to different interpretations at the local level. Some policies were designed to coax a specific sector, but have ambivalent results because they have dubious intentions—in many cases, these policies undermine other sectors, while responding to the targeted sector. In the end, large holders and richer farmers benefit more from national level policies than smallholders, because the former have more access to policy information and can leverage the associated cost of policy implementation.

[27] Government critics however maintain, that these negative effects are "intended".

[28] We were surprised to find out a "low-level" awareness among interviewed agricultural technicians about the Magna Carta for smallholders—very few at least have "heard" about it, while the majority has not heard about it at all.

Without disregarding the importance of national-level policies in providing an enabling environment, smallholders prefer locally-crafted policies, as they would have better chances in the formulation process, with the opportunity to raise their voice and propose practical solutions. At the local level, promoting smallholder investments in VAF system requires a decisive policy action in terms of improving the effectiveness of the extension system, with emphasis on improved technology provision and programmatic support for market linkages and provisioning of appropriate infrastructure. Incentives in form of credits, subsidies, technical assistance, crop insurance, and rewards for good practices are best negotiated at the local level, than at the national level. Monitoring policy outcomes is also more convenient, with the use of evidence-based criteria and indicators by local monitoring teams. However, this requires a vibrant local extension system, adept and responsive to the needs of smallholders. Behind this is the issue of political will among politicians and government leaders to develop incentive-based policies tailored to the needs and interest of smallholders.

However, the importance of national-level policies is also recognized. National-level policies are needed to deal with cross-cutting issues that have national and international implications. In the vegetable sector, producers are often badly hit by high costs, so issues such as reducing costs across the market value chain, price regulation and control, commodity protection, non-tariff barriers, and global trade should be the main concern of national-level policies. Trade and price policies are particularly crucial, as land use decisions by upland farmers are commonly responsive to relative prices and to price variability (Coxhead and Demeke 2005). For the tree sector, issues regarding restrictive policies, transaction costs, land tenure and resource rights, and domestic and international market incentives are to be addressed through national-level policies.

The evolution of types of incentives, from more direct to enabling incentives manifest a responsive attitude on the part of government to address the clamour for long-term policy impacts and sustainability, but there are no quick-fix solutions. Where the national government is unable to remove major policy barriers and national policies do not effectively address the needs of smallholders, locally-crafted policies are needed to offset this gap. Thus, the potential of smallholder investments in VAF systems will likely depend on the essential fit between national and locally-crafted incentive-based policies. Policy linkages between national and local levels need to be established, and policymakers need to mobilize adequate responses at both levels. Finally, the viability of VAF system depends on a whole set of policy environment that both national and local governments can provide. It is therefore a political imperative.

7.0 References

Blaikie, P. 1985. *The Political Economy of Soil Erosion in Developing Countries.* Longman Group Limited, England.

Bukidnon Environment and Natural Resources Office (BENRO). 1993. Summary List of ISF Projects within the Province of Bukidnon. Bukidnon Environment and Natural Resources Office (BENRO), Malaybalay City, Bukidnon.

Catacutan, D. 2007. Scaling Up Landcare in the Philippines: Issues, Methods and Strategies. World Agroforestry Centre. Southeast Asian Regional Research Support Program.

Coxhead I and Demeke B. 2005. How Do Relative Price Changes Alter Land Use Decisions? Panel Data Evidence from the Manupali Watershed, Philippines. *Ins.* Land use change in tropical watersheds: evidence, causes and remedies edited by Ian Coxhead and Gerry Shively. CABI Publishing.

Coxhead I, Rola A, Kim K. 2005. How Do National Markets and Price Policies Affect Land Use at the Forest Margin? *Ins.* Land use change in tropical watersheds: evidence, causes and remedies edited by Ian Coxhead and Gerry Shively. CABI Publishing.

Cramb, R. 2000. Soil conservation technologies for smallholder farming system in the Philippine uplands: A socio-economic evaluation. *ACIAR Monograph Series*, No. 78. ACIAR. Canberra, ACT.

David, C. 1994. GATT-UR and Philippine Agriculture: Facts and Fallacies. *Journal of Philippine Development.* Volume 21 Number 38 First and Second Semesters.

Dauvergne, P. 1997. *Shadows in the Forests: Japan and the Politics of Timber in Southeast Asia,* England, The MIT Press.

Enters, T. 1999. Incentives as policy instruments – key concepts and definitions. In: Sanders W. Huszar P, Sombatpanit S, Enters T. (Eds.) *Incentives in Soil Conservation.* Enfield: Science Publishers, Inc.

Enters, T. 2001. Incentives for soil conservation. In: EM Bridges, ID Hannam, LR Oldelman, FWT Penning de Vries, SJ Scherr, Samran Sombatpanit (Eds.) *Response to land degradation*. Oxford and IBH Publishing Co. Pvt. Ltd, New Delhi and Calcutta.

Enters, T., Durst, P., C. Brown, J. Carle, P McKenzie. 2004. *What Does It Take? The Role of Incentives in Forest Plantation Development in the Asia-Pacific Region – Executive Summary.* Bangkok, Thailand: FAO.

Garrity, D., A. Mercado, Jr. M. Stark. 1998. Building smallholder into successful natural resource management at the watershed scale. In: P. de Vries, W. Frits, F.

Agus, J. Kerr (Eds.) *Soil erosion at multiple scales: principles and methods for assessing causes and impacts*. CABI and IBSRAM.

Giger, M. 1999. Avoiding the shortcut: Moving beyond the use of direct incentives – A review of experiences with the use of incentives in projects for sustainable soil management. *Development and Environment Reports No 17.* Centre for Development and, Institute of Geography, University of Berne, Switzerland.

Grant, R and J. Sugarman. 2004. Ethics in Human Subjects Research: Do Incentives Matter? *Journal of Medicine and Philosophy.* Volume 29 No. 6. Taylor and Francis, Inc.

Hobbs J. 2003. Incentives for the adoption of Good Agricultural Practices (GAP). *Food and Agriculture Organization.* Available on-line: http://www.fao.org/prods/GAP/archive/Incentives_en.htm (Accessed 2 May 2007).

Kummer, D. 1984. Upland degradation and attempts at upland development in the Philippines. Policy Brief No 12, Forestry Development Center, University of the Philippines, Los Baños, Laguna, Philippines.

Laffont, J and Martimort, D. 2001. *The Theory of Incentives: The Principal-Agent Model.* London: Princeton University Press.

Macabasco, D. 2004. A Closer Look at Philippine Vegetable Imports. *Agrifood Trade Service.* Available on-line: *http://www.agr.gc.cal* (Accessed 15 December 2007).

Magno, F. 2001. Forest devolution and social capital: State-civil society relations in the Philippines. Environmental History. *BNET.* Available on-line: http://findarticles.com/p/articles/mi_qa3854/is_200104/ai_n8929471/pg_1 (Accessed 15 December 2007).

Nera, B. 1997. Agroforestry of DENR's social forestry program. *Developments in Agroforestry Research*, Book Series Number 160/1997, Philippine Council for Agriculture, Forestry, and Natural Resources Research and Development, Los Baños, Laguna, Philippines.

Pascual, F and Glipo, A. 2002. WTO and Philippine Agriculture. Development Forum, No1 Series 2002.

Philippine Department of Agriculture. 2006. Report on Performance. Available on line: http://www.da.gov.ph/wps/portal (Accessed on 15 December 2007).

Department of Agriculture – ACPC Monitor. 2003. Small Farmers and Fisherfolk: How many are they? *Issue No. 2 Series of 2003 June 2, 2003.*

Pulhin, J. 2003. Trends in Forest Policy in the Philippines. In: Inoue, M. (Ed.) *Policy Trend Report 2002*, IGES Forest Conservation Project. Soubun Printing Co. Ltd., Tokyo.

Pulhin, J. et al. 2004. Historical Review of Forest Rehabilitation Initiatives in the Philippines, A country report submitted to the Centre for International Forestry Research (CIFOR) as part of its regional study on *Forest Rehabilitation: Lessons from the Past*.

Reyes, S. 2007. AFMA: A new lesson in life. *Agri-Food Trade Service.* Available on-line: http://atn-riae.agr.ca/asean/4298_e.htm (Accessed 2 May 2007).

Sajise P., D. Ganapin. 1990. An Overview of Upland Development in the Philippines. In: Blair G., R. Lefroy (Eds.) *Technologies for Sustainable Agriculture on Marginal Uplands in Southeast Asia.* Canberra, ACT: Australian Centre for International Agricultural Research (ACIAR).

SANREM CRSP-LTRP 5. 2005. Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds. Unpublished material

Scherr S. 1999a. Soil Degradation: A threat to developing country food security by 2020? In Discussion Paper No. 27, International Food Policy Research Institute, Washington DC, USA.

Scherr S. 1999b. Poverty-Environment Interactions in Agriculture: Key factors and policy implications. United Nations Development Programme and European Commission.

Scherr, S., Amornsanguasin, E. Chiong-Javier, D. Garrity, S. Sunito, Saharuddin. 2001. Local organizations in natural resource management in the uplands of Southeast Asia: policy context and institutional landscape. Paper presented to SANREM Conference on "Sustaining Upland Development in Southeast Asia: Issues, Tools and Institutions for Local Natural Resource Management", Makati, Metro Manila, Philippines, May 28-30.

Sicat, G. 2003. *Philippine Economic and Development Issues*. Anvil Publishing Inc., Pasig City, Philippines.

Smith P. 1998. The use of subsidies for soil and water conservation: A case study from western India. Network Paper No. 87. *Agricultural and Research Extension Network.* London: Overseas Development Institute.

Tinsley R. 2004. *Developing Smallholder Agriculture – A global perspective*. Ag Be Publishing, Brussels, Belgium.

Vossenaar R, Wynen E. 2004. Trading Opportunities for Organic Food Products from Development Countries. *United Nations Conference on Trade and Development*. Availableon-line: http://www.unctad.org/trade_env/test1/publications/organic.pdf?docid=4502%2B%22ItemID=2068) (Accessed 2 May 2007).

Wideman M. 2002. Wideman's Comparative Glossary of Project Management Terms v3.1. *Max's Project Management Wisdom.* (Available on-line:

http://www.maxwideman.com/pmglossary/PMG_I00.htm#Inception) (Accessed on 16 October 2006).

World Development Report. 2008. World Development Report: Development and the next generation. *The World Bank*. (Available from (Accessed on 14 January 2008).