

# 17. Bridging the Gap between Central and Locally-Formulated Policies to Promote Smallholder Investments in Vegetable Agroforestry: the case of Lantapan Municipality in southern Philippines\*

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## Abstract

The Philippines' policy environment is generally supportive to vegetable agroforestry (VAF), but the benefits to smallholders remain limited. National level policies are often slow in addressing the diverse and immediate needs of smallholders—local policy response is thus needed to offset this gap. At the local level, policy support is needed to improve the extension system especially in improving access to new technologies, establishing market linkages and providing infrastructure support. This paper presents the experience of Lantapan Municipality in initiating a pro-smallholder incentive-based policy, to stimulate smallholder investments in VAF.

**Keywords:** Policy instruments, vegetable agroforestry, incentive-based policy, smallholders

## 1. Introduction

As the country's major sector, agriculture is deeply ingrained in Philippine society. Maintaining the viability of farming systems and the long-term health of natural resources are thus primordial to sustain local and national economies. However, as in many developing countries, significant environmental issues remain, such as soil erosion, biodiversity decline and declining water quantity and quality (SANREM LTRP 5, 2005). The ability of farmers to put redress to environmental problems is limited; smallholders, who account more than 90 percent of farmers and fisherfolk often lacked financial resources to invest in sustainable farming technologies, and in many cases issues compound because of economic and social pressures, complacency on environmental issues (Regmi and Weber, 2000), inability to invest in sustainable farming, inadequate institutional structures to facilitate information and lack of market incentives (Catacutan and Duque-Piñon, 2009). Thus, policy incentives are needed to stimulate smallholder investments in sustainable agriculture and natural resource management (NRM).

\* Materials in this paper were substantially drawn from a related paper entitled 'The Policy Environment of Vegetable-Agroforestry System in the Philippines: Are there incentives for smallholders?' published by the *International Journal on Environment and Development* (IJED) in 2009.

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Our review of key national policies on vegetable agroforestry (VAF)<sup>2</sup> revealed that while policy incentives at the national level exist, their benefits rarely trickle down to smallholders for two reasons: i) they have limited access to information on new policies and hence, the opportunities brought by policy change; and ii) they do not have resources to leverage policy implementation. Correspondingly, benefits from national policies are mostly captured by rich farmers since they have more access to information and have more resources to complement implementation (Catacutan and Piñon, 2009). In view of this, we recommended that local government units (LGUs) take locally appropriate actions to address the needs of smallholders in a timely manner. The Philippine Local Government Code of 1991 (LGC) mandates LGUs to develop policies, initiate innovations, mitigate and adopt measures to manage the natural environment. This is a significant shift from prescriptive to enabling legislation, recognizing that LGUs can equally, if not better, achieve environmental goals.

However, there are policy and institutional challenges at the local level. To begin with, most policy initiatives are production-oriented aiming for accelerated growth in the agricultural sector through intensification and diversification strategies (David, 1994). The agricultural extension system is also marred with funding constraints and is unable to deliver sustainable outcomes due to limited and varying capabilities, fragmented efforts and poor coordination between national departments and LGUs. LGU priorities also changed quickly, and they rarely provide sufficient attention to local extension (de Torres, 2000). Nonetheless, there are few LGUs and politicians that are searching for useful information to improve their decisions. As an example, the Local Government of Lantapan responded positively to the results of our policy review and recommendations and became interested on the idea of incentives to encourage smallholders to invest in sustainable farming system (SFS), including VAF. VAF is a viable farming system that integrates vegetables in tree-based systems and vice versa (Mercado et al., 2009). The system has great potential to provide multiple benefits, including provision of micronutrients to the diet of rural communities and enhancement of on-farm biodiversity and environmental sustainability. In 2009, the Local Government finally approved the 'Incentive-Based' Policy with a 5-year development program. While it is new, the program has attracted interest and support among farmers and partner agencies.

This paper discusses the development and implementation of Lantapan's Incentive-Based Policy on SFS in Bukidnon province, in southern

<sup>2</sup>The policy study on VAF was conducted as part of the USAID-funded SANREM project in Lantapan on 'Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds'.

Philippines. Policy review findings and stakeholder perspectives were presented to farmers, policymakers, key officials and department heads, and agricultural technologists (ATs), as well as other stakeholders. A series of negotiations through workshops were conducted to develop the policy, and to establish the institutional mechanism necessary to implement the Incentive Program.

## 2. Conceptual Background

### 2.1 Incentives and smallholders

The concept of incentives is defined according to the context in which it is used, but generally it implies something that contributes to, or serves as motivation to, accomplish a task, which may lead to rewards. Incentives are categorized as remunerative and moral<sup>3</sup>. Remunerative are financial or material rewards in exchange of acting in a particular way, while moral incentives are particular moves that are regarded as acceptable that results to increase in self-esteem or recognition. Remunerative incentives can be either direct or indirect (Enters et al., 2004) (Fig. 1). Direct incentives influence returns to investments directly, while indirect incentives have an indirect effect in changing the overall situation. Indirect incentives were further categorized into variable and enabling. Variable incentives are economic factors that may be implemented to affect the net return of an investment, while enabling incentives are factors that affect decision-making with greater impact because of wider coverage. In this study, incentives are viewed as external prompts provided by the government through policies and programs to which farmers respond, either positively or negatively. Conversely, disincentives refer to those that discourage, hinder or deter positive responses or actions to occur. Further in this study, incentives are considered elements of policy instruments that increase the comparative advantage of VAF, and thus stimulate smallholder investments.

In the Philippines, smallholders are defined as natural persons cultivating in not more than five hectares<sup>4</sup>, whose livelihood depends on small-scale subsistence farming with sales, barter or exchange of agricultural products not exceeding a gross value of P180,000 per annum<sup>5</sup>. Smallholders, including fisherfolks, constitute over 90 percent of all farmers, which is around 21 per

<sup>3</sup>The concept of incentives has been used in project management, development projects, economics and medical profession (Smith, 1998; Laffont and Martimort, 2001; Wideman, 2002; Grant and Sugarman, 2004).

<sup>4</sup>As defined by the Philippine Agrarian Law.

<sup>5</sup>As defined by the Magna Carta for Small Farmers (Republic Act 7607). This figure was based on 1992 constant prices.

cent of the country's total labor force. Between census years 1971 and 1991, the average farm size of smallholders decreased from 3.6 to 2.1 hectares, as the number of farms increased from 2.3 to 4.6 millions, with the total farm area increasing from 8.4 to 9.9 million hectares (ACPC-Monitor, 2003). There is ample reason for the government and other relevant institutions to prioritize this important sector. As mentioned, smallholders comprised a significant segment in the farming population, and are most vulnerable to rapidly changing economic, social, political and environmental conditions. Often, national governments concentrate on large farmers for national food security and self-sufficiency issues because they have the operational resources, and are assumed to be easier to work with and more responsive to suggestions (Tinsley, 2004). With this, Tinsley (2004) adds that assisting smallholders has become an effort for enhancing social welfare rather than substantially harnessing their potentials to contribute in national agricultural output.

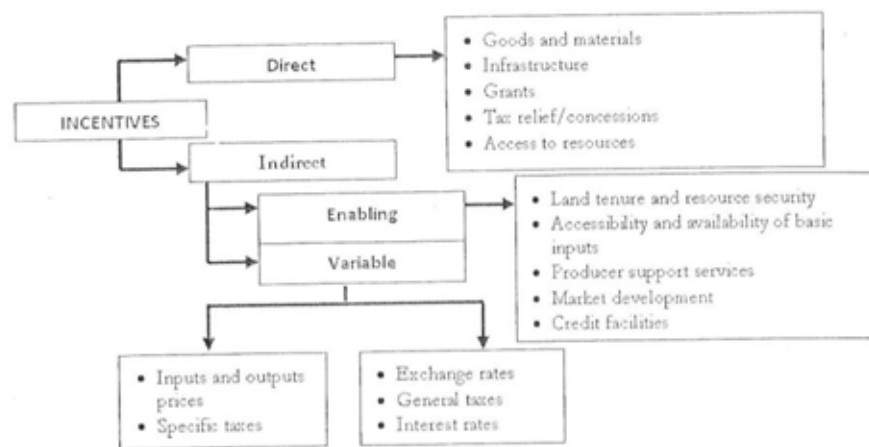


Figure 1. Types and examples of incentives (Source: Enters et al., 2004).

## 2.2 National policy incentives and disincentives to VAF<sup>6</sup>

For the tree sector, direct incentives were common from 1970s to 1980s, but these gradually shifted to more indirect ones such as comprehensive land tenure and resource use rights within forest areas (Catacutan and Duque-Piñon, 2009). However, disincentives remained because of the investments required

<sup>6</sup>The following section is extracted from the author's report on the 'Policy Environment of Vegetable-Agroforestry (VAF) system in the Philippines: Are there incentives for smallholders?' which was published by the *International Journal of Ecology and Development (IJED)* in 2009.

to develop large forest areas, the high transaction cost involved in harvesting and transporting logs timber and other forest products, and uncertainty in future timber prices (Table 1). For the vegetable sector, policy incentives were largely framed within changing national and international trade regimes. While this opened up international markets, smallholders were constrained by the high cost involved in meeting international standards (Table 2). The challenge remains in removing policy and economic barriers not only at the level of local producers but through the entire value chain.

In general, the policy environment for VAF is encouraging, with entrenched incentives to boost its contribution to national economic growth. Many policies have good intentions but are poorly implemented. While incentives for smallholders exist, disincentives persist, limiting the potential of smallholder investment in VAF. Moreover, well-meaning policies produce negative results because their intentions are often too general or in-conflict with other sector policies. Conflicts are also prevalent within a policy sector. For example, the laudable intent of the Magna Carta for Small Farmers was superseded by poor-blind policies or policies that are insensitive to the conditions of poor farmers. Some policies provide incentives to their intended sector, albeit disproportionately, but at the same time, these policies create disincentives to another sector. In the end, elite farmers tend to benefit more than smallholders because they can leverage the associated cost of policy implementation.

Ultimately, the gap between policy intention and practice remains wide. The problem with national policies is that they convey generic incentive packages that are subject to different interpretations at the local level<sup>7</sup>, while LGUs are stifling its ability to implement them. Many national-level policies are barely understood by implementing agencies, because they are inherently complex, or they are either not communicated or poorly disseminated at the local level. Policy failures are also due in part to the disparity between policy goals and the realities on the ground. Overall, national policies suffer from structural, institutional and funding constraints.

<sup>7</sup>It was surprising to find out 'low-level' awareness among interviewed ATs about the Magna Carta for Small Farmers—very few at least have 'heard' about it, while the majority has not heard about it at all.

Table 1. Tree growing.

Incentives	Disincentives
<b>PD 705 (1975) - Revised Forestry Code of the Philippines</b>	
Ownership rights of planted trees Rights to sell, contract, convey or dispose planted trees Discounted fees, rentals & forest charges Tax exemptions & credits Free technical assistance Credit assistance and use of facilities Exemption from export log ban Market for timber products Unrestricted export of plantation products	The disincentives to smallholders are: The minimum area that can be applied for tree farming is 100 hectares and for agroforestry, 10 hectares. Lack of regular cash flow between planting and harvesting Uncertainties with future prices of tree products
<b>LOI 1260 (1982) - Integrated Social Forestry</b>	
Grants and land tenure Priority in wage-based employment Extension and information services, community organizing Research & development support Share of forest income Exemption from forest charges Technical, legal, financial, marketing assistance and others	Incomplete support system provided by government Farmers are unable to defray the initial cost of investment in forest areas
<b>EO 263 (1995) - Community-Based Forestry Management</b>	
Security of land tenure Right to use & manage forest resources Exemption from land use rental & forest charges Right to be consulted on government projects Authority to enter contracts Access to technical assistance Right to receive all incomes & proceeds of the area	Many CBFM areas are either logged-over or relatively forested, requiring huge capital to develop Inadequate technical & financial support during the initial stage High transaction costs involved in securing permits for harvesting & transporting Lack of support in marketing timber
<b>DENR-AO 05-25 - Upland Agroforestry Program</b>	
Promotes equitable distribution of opportunities and income in developing agroforestry systems Encourages public-private partnerships	Minimum area that can be applied is 50 hectares Farmers shall incur the cost of survey, including mapping and survey Farmers need to show proof of financial and technical capability to undertake agroforestry (e.g. credit lines from financial institutions)

Table 2. Vegetable production.

Incentives	Disincentives
<b>PD 1467 (1989) - Crop Insurance Law</b>	
Protects agricultural producers against loss of crops and assets.	Premium payment is hardly affordable to smallholders, and requirements are not easy to follow (e.g. following the cropping calendar). Due to limited funding, the program focused on big farmers patronizing formal credit with financing institutions. Smallholders find it difficult to comply with credit requirements/procedures
<b>RA 8178 - Agricultural Tariffication Act</b>	
Subsidies for irrigation Farm-to-market roads Training and extension services Post-harvest facilities Credit, others.	Entry of imported goods outpaced the production potential of small farmers. Although it provides many incentives, it subverts policy support for smallholders, which is to protect their products
<b>RA 8435 (1997) - Agricultural and Fisheries Modernization Act</b>	
Credit assistance to smallholders and fisherfolk Promote research and development Training and extension services Information and marketing support	Implementation of this Law was poor and scanty, as the national government was unable to match the policy with necessary funding on the ground.
<b>RA 7900 - High Value Crops Development Act</b>	
Market development and promotion Infrastructure support Investment and financing Technology development, training and extension support Program advocacy, information networking and dissemination	Requires huge investments. The only way to make this possible is to generate counter-part funds from local governments. No price regulation, stabilization and control on many vegetable commodities; hence the market for high value crops is highly precarious.
<b>DA-AO 25 (2005) - Good Agricultural Practices (GAP)</b>	
Product differentiation/premium price of crops; access to market/supply chain Stabilization of yield/revenue Reduction in wastage Increase in farm assets Protection against market externalities Subsidies and recognition Skills improvement	Too costly for smallholders to meet GAP standards (e.g. use of new production techniques and more expensive environment-friendly inputs, etc.) No assurance of international markets because of strict phyto-sanitary rules imposed by importing countries



Table 2. Continued.

Incentives	Disincentives
<b>EO 481 (2005) – Organic Agriculture</b>	
Puts premium value to organically produced agricultural products.	Insufficient supply of organic inputs and the price is very high for small farmers Tedious organic certification process Meeting standards means economic sacrifice for small farmers

### 3. VAF Related Policies in Landtapan and Stakeholder's Perspectives

In general, the policy environment in Lantapan for VAF is less encouraging. Five local policies were found to be related to VAF but did not have clear incentives (Table 3). The only policy that is directly related to vegetable production and marketing<sup>8</sup> was the inspection of transported vegetables outside

Table 3. Local policies related to VAF.

Municipal ordinances	Date legislated
Requiring all farm tillers and all landowners to adopt contour farming and sustainable agricultural 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	October 1999
Prohibiting garbage disposal (household wastes, 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.

<sup>8</sup> Article IX of the Codified Local Ordinances (2001) mandated the inspection of vegetables, conducted at the inspection post in the municipal market. Sanitary inspection fee was P0.25 per sack. A Special Task Force was created to conduct monitoring and inspection of vegetables.

Lantapan. A related policy deals with restricting garbage disposal in rivers and creeks, particularly empty chemical containers. These policies, however, do not have incentive provisions. The only policy with clear incentive is Ordinance No. 65, requiring all farmers to adopt contour farming. It contains 'entitlement of assistance' as incentive for adopting contour farming. At the village level, resolutions were enacted to enforce this ordinance.

With decentralization, local communities are at least informed and consulted on new policies and their endorsement is sought<sup>9</sup>. Interviewed farmers believed that their voices are important in policy development and their contributions are crucial to successful implementation. They also affirmed the importance of incentive-based policies to promote adoption and investment in VAF. Interviewed farmers ranked some aspects of VAF that need policy action, and these were technology promotion, improvement of marketing system and improvement of local extension (Table 4). Interestingly, these conform to Coxhead et al. (2005) study on the effects of markets and price policies on land use decisions in Lantapan, which revealed that the most effective instrument to promote sustainable agriculture is interventions on technology transfer, extension and education. A parallel study conducted by De la Salle University scientists on market issues of VAF found that factors constraining marketing vegetables are lack of access to market information, inability to control market pricing and high cost of hauling and trucking (Chiong-Javier, 2009).

Notwithstanding the importance of national level policies, smallholders prefer locally-formulated policies, where responsible agencies can be easily approached, and mid-course actions can be applied to ensure smooth implementation. Locally-crafted policy incentives may be more realistic and pro-poor, can be formulated with greater flexibility, and are more cost efficient and effective. Smallholders support the notion of locally-crafted policies because, at least, the opportunity is there to participate in the design process. Nevertheless, the importance of national-level policies is equally recognized. National-level policies are needed to address cross-cutting issues that have national and international implications. In the vegetable sector, producers are often badly hit by high costs in the value chain; hence issues such as reducing costs across the value chain, price regulation and control, commodity protection, removing non-tariff barriers, and global trade are within the turf of national policies. Trade and price policies are particularly crucial, as land use decisions by upland farmers are commonly responsive to relative prices and

<sup>9</sup> In barangay assembly meetings, which are held once a month. These meetings serve as platforms for information dissemination, consultation, planning and decision-making. Under the LGC, the policy development process includes a 'public hearing' to allow 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.

to price variability (Coxhead and Demeke, 2005). For the tree sector, issues regarding restrictive policies, transaction costs, high capital outlay in tenured forest areas, and uncertainty in timber prices are also likely to be addressed through the national level policies.

In summary, national forest and agricultural policies are available to provide a common framework and enabling environment, but often faced with implementation challenges due to diversity and complexity of circumstances that local farmers face, not to mention the ineptness of the national government in policy implementation and the inherent flaws of many policies. In terms of VAF, incentive policies are pervasive at the national level,

**Table 4.** Ranking of policy incentives by farmers in Lantapan Municipality.

Rank	Incentives	Relation to smallholder farmers to adopt VAF
1	Promotion of sustainable farming technologies	Provision of appropriate upland technologies, access to technical assistance (e.g. model farms, training), including promotion of indigenous knowledge
2	Enhancing marketing and price support system	Farmers benefit marketing schemes or arrangements with product buyers; they are also ensured of regulated market price
3	Improving local extension support program	Development of technologies and mechanisms that improve land productivity, and farmers' capacity to substantially participate in decision-making processes
4	Subsidies/Tax concessions	Subsidies as payments or services provided to reduce the cost or raise the return of farmers' activity
5	Infrastructure support	The most common is farm-to-market road as a support infrastructure to transport farmers' products to the market; other include post-harvest facilities, farm machineries and equipment
6	Credit assistance	Farmers are given access to agencies that provide credit assistance (e.g. Land Bank of the Philippines, Quedancor)
7	Land/Resource use rights	Farmers' assurance of future benefits from current investments; incentives to obtain products from own farms
8	Institutional arrangements	Farmers are linked to network of service providers to improve land productivity or enhance their capacity
9	Financial/material support	Farmers are given seed capital to venture into new species of tree or vegetable varieties; provision of planting stock (seeds, seedlings)

but are more favorable to rich farmers, while LGUs are either uninformed of new policies or lacked the resources to support local implementation. Smallholders have particular needs from elite farmers due to differing socio-economic conditions and, therefore, locally-tailored policies should be in place to address their specific needs in a timely manner. LGUs therefore need to provide adequate policy response at their level, to enable their local constituency to significantly contribute to national economic progress.

#### 4. From Research to Policy: The Incentive-Based Policy for VAF

Facilitated by ICRAF scientists, 'problem-policy farming' was undertaken by the Local Government of Lantapan where policy research results were communicated and interpreted, and policy actions were negotiated by everyone involved. The Local Government became interested in the idea of policy incentives and adopted this as a strategy to: i) increase adoption of sustainable farming systems, ii) increase local government and farmer investments in sustainable agriculture, iii) mainstream local government's development programs on sustainable agriculture, iv) enhance linkages and partnerships, and v) sustain environmental services.

The incentive-base policy is expected to offer a new dimension in public service delivery, in which farmers are not regarded as beneficiaries but co-investors. New knowledge generated from the policy reviews laid down the foundation of the incentive-based policy at a time when the Local Government was deeply immersed in looking for viable options for simultaneously meeting economic and environmental goals.

##### 4.1 The incentive policy and SFS investment plan

The Local Government pledges to provide farmers, especially smallholders with more opportunities, not only to develop their skills, but also to gain access on new technologies and to link with markets. Farmers are to be recognized and supported through appropriate incentives, to stimulate adoption of sustainable practices. In 2009, the Local Government enacted Municipal Ordinance No. 114 that outlines an incentive mechanism for smallholder adoption and investment in sustainable land use, to improve livelihoods and maintain environmental services. It also aims to build the social capital of local people, as well as the capacity of the LGU to broker between local communities and external environmental services (ES) buyers. Under this policy, any type of support from the Local Government is provided in form of 'incentive' to farmers and farmer organizations' activities that are linked to sustainable land use.

The Incentive Program focused on three major types of incentives: i) improvement of human and financial capacity of the Municipal Agricultural Extension system, so that in collaboration with partner institutions, it can effectively deliver extension services, ii) provision of marketing infrastructure support, and iii) provision of various types of direct and indirect incentives, such as financial support, rewards, credits, crop insurance, and others (Table 5). The Incentive Program covers a variety of sustainable farming practices (Table 6), and categorizes individual farmers into small- or medium-size based on farm size and extent of agricultural activities, as well as farmer organizations according to extent of agricultural and agri-business activities.

Table 5. Categories of incentives.

Incentive categories	Description
1. Provision of input subsidies for crop production and NRM-based livelihood projects	Financial and material input subsidies, such as planting materials (e.g. timber and fruit seedlings, banana tubers, corn and vegetables seeds, etc.).
2. Provision of improved extension services	Accessibility to Agricultural Technologists (ATs) for readily available assistance and facilitation (e.g. School on Air, demo farms, exposure trips, Farmers' Field School, Technology Training, etc.)
3. Subsidized crop insurance	Facilitation between farmers and the Crop Insurance Program; subsidies in insurance premium payments
4. Micro-financing support	Credit assistance in cash or in-kind; reduced transaction cost in processing credits and loans; farmer linkages with financing institutions
5. Infrastructure support	Farm-to-market roads, pre-and-post harvest facilities, solar driers, etc. for organized farmers
6. Awards and recognition	Cash rewards and recognition of individual farmers and farmer organizations; support for trainings and field visits.
7. Support for marketing	Access to market information, linkages and network, price monitoring, technical assistance on enterprise development, production and marketing analysis services (PMAS)

Table 6. Technologies adopted by farmers in Lantapan Municipality.

	Sustainable farming practices	Specific technology
1	Organic Farming Technology	Vermi-composting/Culture; Bio-N; Nature Farming Technology System (NFTS)
2	Integrated Crop Management (ICM)	Bio-fumigation; Integrated Pest Management (IPM); Soil Testing (Use of STK); Crop rotation
3	Agroforestry	Vegetable-Agroforestry (Vaf); Multi-storey system; Agro-silvopastoral (Including Livestock); Apiculture (Bee culture)
4	Diversified Farming	Multiple cropping; Inter-cropping
5	Sloping Agricultural Land Technology (SALT)	Contour plowing; Contour hedgerow; Any contour barriers; SALT I, II, III and IV (Including Livestock)
6	Soil and Water Conservation (SWC)	Mulching; Cover cropping; Minimum tillage; Drip irrigation
7	Farm Waste Management	Recycling; Composting; Segregation (Liquid and solid)
8	Farm Forestry	Diversification of tree species (Exotic, indigenous and fruits)
9	Clean Energy	Briquette production (Using rice hull, charcoal, farm waste)
10	Indigenous Knowledge System	Indigenous vegetables and medicinal plants; Indigenous pest management
11	Community-wide Clean and Green Projects	Riparian improvement; Water quality monitoring; Community tree parks

Source: ICRAF, LEK-PEK survey, 2007.

However, incentives are linked to certain 'conditions'. Mainly, the condition is for farmers to simultaneously address the key areas of concern under the 'sustainable agriculture' framework, such as improving farm productivity, soil management, water management, on-farm biodiversity and capacity-building, with specific standard practices under each area (Table 7). The Local Government also envisages applying these criteria in other sector-development projects (Fig. 2). For many years, the LGU has been providing livelihood projects and agricultural subsidies without linking these to certain 'conditions', since the objectives were more to do with meeting the expected number of beneficiaries for specific projects and fulfilling political promises. As a result, these projects turned to be a government dole out.

**Table 7-** Standard practices of sustainable agriculture, adopted by the Incentive Program.

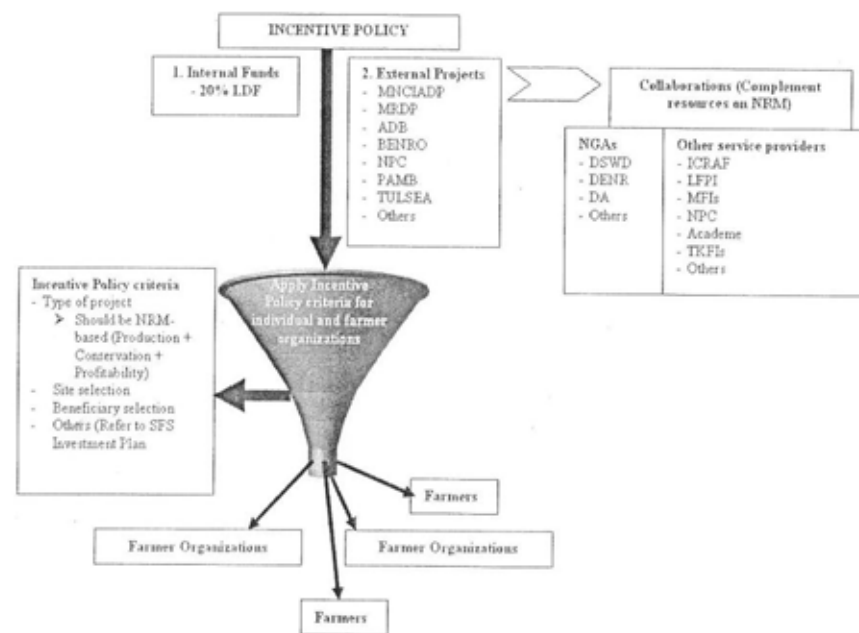
Key areas of concern	Standard practices
Farm productivity	Reduce dependence of inorganic fertilizer inputs, pesticides, insecticides and other chemicals Employ integrated crop management, including biological control and integrated pest management Increase production of, and application of organic fertilizer, such as animal wastes, green and vermi-composts, etc. Diversify farm crops with trees and livestock (e.g. application of Vegetable-Agroforestry [VAF] system) Plant crops that are resistant to drought or excessive rain Develop cropping calendar based on market demand
Soil management	Apply crop rotation, green manure, cover cropping, mulching, etc. to build-up soil nutrients In sloping farms, reduce soil erosion by applying various soil and water conservation (SWC) techniques, such as contour plowing, hedgerows (e.g. Natural Vegetative Strips [NVS], minimum/zero ridge tillage and other contour barriers) No burning of crop residues Reduce tillage/cultivation
Water management	Apply efficient water management techniques, such as rainwater harvesting during wet season and drip irrigation during dry season Small farm reservoir
On-farm biodiversity	Provide areas for natural regeneration of native plants/species Provide corridors of biodiversity
Capacity-building	Farmer undergo training, attend seminars on sustainable farming, and the likes

The required investment of the Incentive Program is 4 million Philippine Pesos (PhP or P in short) for 5 years. This will be met through co-investments with development partners, currently the Mindanao Rural Development Project (MRDP) and Mindanao Northern Coastal Integrated Area Development Project (MNCIADP) of the Department of Agriculture. Current interest from national departments and donor agencies provide promising partnerships for the Incentive Program.

#### 4.2 Implementation scheme

The Municipal Agriculture Office (MAO) is tasked to implement the

incentive-based policy with ATs in the frontline (Fig. 3). A Technical Advisory Committee (TAC) was established, mainly to i) provide implementation oversight; ii) serve as recommendatory body at the municipal level, and iii) monitor and evaluate activities. Fourteen village or Barangay Agriculture and Fishery Councils (BAFCs) were organized and federated at the municipal level (Municipal Agriculture and Fishery Council or MAFC). The BAFCs assist the ATs at the village level, while the MAFC assist the MAO and the TAC at the municipal level.



**Figure 2.** Mainstreaming the incentive policy in the local development plan.

The Local Government also allocated funds for building the capacity of this newly created 'institutional structure' to effectively implement the Incentive Program. Training and organizational strengthening was targeted for the MAO since they will be central to implementation. Since ATs will be working closely with farmers, a higher level of training and skills (e.g. participatory methodologies) is needed for them to apply knowledge that is research-based and site-specific rather than delivering generic information (De Torres, 2000). The LGU expects to revitalize the extension system so that technicians are able to respond more effectively and rapidly to farmers.





Figure 3. Implementation process and institutional functions and roles.

### 4.3 Challenges

Mainstreaming the Incentive Program in the local development agenda is not a seamless process. Considerable work remains in terms of moving the incentive-based policy forward, to become successful. There are challenges that implementers must overcome to ensure success. First, it is not easy to mainstream the policy to other sectors where their reception is not comparable with the MAO. More dialogues are needed, especially on the roles of participating agencies. Another challenge is that local people and politicians often have different interests and priorities—they operate at different temporal and spatial scales, do not necessarily speak the same language, and their expectations do not always match; and with changes in LGU leadership, it will take time before a new administration can accept and adopt the Incentive Program. Effective utilization of funds is also critical to success; diversion of funds is common and often goes with leadership change. Lastly, there is a big chal-

lenge in improving the technical and institutional capacity of the MAO being the lead implementer as well as the effectiveness of the implementing structure.

### 5. Conclusions

The Philippines' policy environment for VAF is generally supportive. Incentives are a common feature in many national policies, but they do not fully address the complex, unique and diverse conditions of smallholders. Local responses are thus needed to offset this gap. At the local level, promoting smallholder investments in VAF requires decisive policy actions in terms of raising the effectiveness of agricultural extension with emphasis on improving access to technical expertise on new technologies, establishing market linkages, and providing infrastructure. What this experience brings is the capacity of local governments, with all their challenges and imperfections, to provide adequate policy response where national level policies fail to impact the environment and livelihoods of small farmers. In terms of climate change mitigation, national governments are unlikely to meet their obligations to curbing carbon emissions and contribute to global targets, without appropriate actions on the ground. Therefore, the Lantapan initiative is propitious in terms of adaptation and climate change mitigation.

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