

AGRICULTURAL POLICY STRATEGIES TO ADDRESS CHALLENGES FACING TIMOR-LESTE: RURAL POVERTY ALLEVIATION AND SOCIAL TRANSFORMATION¹

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ABSTRACT

The direction of the Timor-Leste development policy is focused on rural development, where this development strategy has been successful to place the agricultural sector as the largest contributor for the economic growth of Timor-Leste. During the last 2 years, the agricultural sector of Timor-Leste was able to grow with an annual rate of more than 10%. However, the success of the Timor-Leste development was achieved during the increase of the poverty rate and the occurrence of the social conflict potential tendency in the community. The development, which was centralized in the urban areas, provided uneven benefit to the overall population. The poverty rate in the rural areas is much higher compared to the urban areas, due to the low economic activities and employment opportunities in the rural areas. The national food security is threatened, since the national rice production is still far below the national consumption need as well as the high rate of rice import. The gap between the rural and urban development and the weak food security may trigger the horizontal conflict within the people. This is worsened by the fact that there is a gap between the life of the former independent fighters and the war victim widows (with low education level) and the community groups with high education level. The potential of social conflict is a problem that should immediately be solved, as it may harm the ongoing development process. The policies in the agriculture sector, as the main sector in Timor-Leste, are expected to become important instruments. The agricultural development may at least be able to overcome the poverty problems, strengthen the national food security, and may drive the social transformation in Timor-Leste. The policy strategies of conditional in-kind transfer, unconditional and conditional cash transfer, as well as the food diversification, become the agriculture policy strategies to overcome the current problems.

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OBJECTIVES

Post its independence, Timor-Leste continues to face social and economic challenges that are not easy to be solved. It became a sovereign state on 20 May 2002. Social conflicts caused the instability of this country and negative effects on the investment climate. The economy is unable to provide productive employment opportunities for the rapidly growing labor force. The private sector remains weak and private investment needed for job creation is very low, poor infrastructure services to attend the rapid urbanization, compounded by inadequate human resources and weak institutional capacities. As a country transiting from post-conflict to a development path, Timor-Leste is facing enormous challenges to catch up with its development progress. Amongst the many challenges facing the country, income inequality and poverty are probably the most important ones. Based on the Timor-Leste Survey of Living Standards (TLSLS) 2007 data, Timor-Leste is the poorest in the ASEAN region.

The majority of the people who fought for the independence were forced to disregard their education, which caused their low human resources competitive capacity, particularly the old generation. Conversely, the people who were more prioritizing the education during the era of struggle to achieve the independence are the groups that most benefit from the independence itself. In fact, the independence of Timor-Leste should actually provide benefit to everyone without exception, and not only to those with good human resource quality, but also to all people, including those who fought for the independence and have low education level. The inequality of income among the population groups has the potential to emerge horizontal conflicts in the country.

One of the sectors that can accommodate unskilled labor is the agricultural sector. This is because, although the farmers do not need a high education level, they still should have a certain culture as farmers in order to be able to productively manage the land. In fact, the majority of the farmers in Timor-Leste do not have this professional farmer skill. The identity as farmers in Timor-Leste are even given to all citizens who live in the rural areas and have a low education level, where they do not have other employment alternatives than to become farmers. The result is predictable, namely the low productivity of the agriculture sector in Timor-Leste. Only 30% of the agricultural land is managed by professional farmers. Professional farmer is referred to a farmer with adequate agriculture cultivation knowledge and implements the farming system properly.

Simultaneously, the development priority in Timor-Leste is directed to establish the national food security and to accelerate the integrated rural development. Therefore, the agricultural sector is considered as having a strategic role to materialize the national development priority in Timor-Leste during 20 years ahead. The main challenge that is currently faced by the agricultural sector in Timor-Leste is the low agricultural productivity as well as the quite high gaps in terms of social and economic between agricultural households and non-agricultural households. As mentioned before, the independence fighters, who have a low education level, are in general in the agricultural sector, where this sector is not yet able

to be relied on as a sufficient income source in order to live decently. The agricultural development and rural development in Timor-Leste are not only pushed to establish a better national food security, but more than that, the agricultural sector and the rural development should also be able to become instruments to eradicate poverty and to minimize the income gap within the people. This is certainly not easy for Timor-Leste, since the agricultural sector is not only focusing on food issues, but it should also be able to prevent the occurrence of social conflicts and create a better national stability in the future.

Sustainable poverty eradication in Timor-Leste through agricultural development needs appropriate strategy. First, a policy strategy that can increase the income of the poor people should be chosen in order to take out poor people from poverty. Second, there should be a social transformation so that the poverty eradication can be sustainable and the income inequality between the agricultural sector and the other sectors can be reduced. The poverty eradication strategy is conducted through the acceleration in the agricultural growth, while the social transformation is handled by encouraging the improvement of the poor community resources quality, encouraging the social cohesion and reducing sectoral income inequality.

This paper has overriding objective: to describe the agricultural policy strategy to reduce poverty in rural area and to promote social transformation. These strategies have been supplemented by the commitment of Government to the Millennium Development Goals, which again accord the highest priority to poverty reduction. In responding to these national imperatives, Ministry of Agriculture and Fisheries (MAF) sees its role in addressing food security as an essential step towards poverty reduction, and in facilitating the transition from subsistence agriculture towards more profitable and sustainable agriculture.

THE PROFILE OF TIMOR-LESTE IN BRIEF

Timor-Leste is a parliamentary democratic state with a total land area of 14,609.37 sq. km. It has unicameral legislature system, with the President as the head of the state, and the Prime Minister as the head of the government. Administratively, Timor-Leste consists of 13 districts with 5 regions. Geographically Timor-Leste lies between 123° 25' Eastern Longitude (EL) – 127° 19' EL and 8° 17' Southern Latitude (SL) – 10° 22' SL. Almost the entire region of Timor-Leste occupy the North Eastern part of Timor island, except Oecussi district which is enclave within Indonesian part of the island (that is in the western half). Estimates show that in 2007 the population of Timor-Leste was 1.047 million inhabitants, characterized mainly by a young age population (54% of the population is at the age of 19 years old and below) and 80% of the people live in rural areas.

The overall quality of human resources in terms of educational attainment remains one of the biggest challenges in Timor-Leste. Approximately 47% of adult population (18 years old and older) never attended school. The situation is worse in the rural areas where 53% of the adults never attended school. This is a clear indication that education facilities and access to education in the rural areas remain a

challenge compared to the situation in urban areas. From a gender angle, more women continue to have lower educational attainment than men.

As a newly born country in Asia, the Government of Timor-Leste (GoTL) together with various international donor agencies, including the United Nations Development Programme (UNDP), has launched different efforts to improve people's living conditions. The Timor-Leste Survey of Living Standards (TLSLS) in 2007 shows that about half of population lives below the national poverty line. The majority of the poor live in the rural areas, make their living in agricultural sectors. On the other hand, the overall development planning in Timor-Leste has two objectives: (a) reducing the poverty rate in all regions, and (b) facilitating sustainable economic growth via improving access to health and education for all people of Timor-Leste.

Table-1. Share of GDP and Main Job in the Timorese Economy, 2007

<i>Sector</i>	<i>Share of GDP</i>		<i>Main Job</i>			
	<i>\$US million</i>	<i>%</i>	<i>Men</i>	<i>%</i>	<i>Women</i>	<i>%</i>
Agriculture, Forestry and Fishery	124.7	31.5	82.1		87.7	
Public Sector	144	36.4	6.4		3.3	
Mining and Quarrying	2.2	0.6	1.2		0.2	
Manufacturing	10.2	2.6				
Private Construction	19	4.8				
Transport and Communications	31	7.8	1.5			
Wholesale and Retail Trade	31	7.8	1.2		3.6	
Financial and Other Services	33.6	8.5	7.6		5.2	
Total	395.7	100	100		100	

Source: Calculated from TLSLS 2007 and National Account 2007.

In 2007, the agricultural sector in Timor-Leste contributed around 31.5% of the non-oil GDP, where almost 97% of the agricultural production originated from crops, estates (small estate), and livestock. The forestry and fishery role was only 3% of agricultural GDP. It is clear that agriculture will remain the main source of employment and income for the majority of the population of Timor-Leste for the foreseeable future. The sector and its development are of vital importance to mitigating widespread poverty, providing employment, and addressing the issue of food security.

Particularly for rice (paddy), the functional land extent in 2008 in Timor-Leste was around 36 thousand hectare, where the extent of the cultivation land reached 46,630 hectare. Only 30% of the functional land was planted with high yielding variety, while the remaining was planted with the local variety. The productivity of the high yielding variety only reached 2.5 tons per hectare, while the productivity of the local variety was below 1.4 tons per hectare. The superiority of the agriculture in Timor-Leste is that majority of the agricultural system is organic farming without using the chemical fertilizer and also

without pesticide. In addition the nutrition elements of the soil in Timor-Leste will also not damage quickly, since only 21% of the land are cultivated 2 or 3 times a year, while 79% of the paddy land only has once harvest. Although this is good viewed from the aspect of environment, the national production level becomes low.

The total production of un-hulled rice (as the staple food in Timor-Leste) in 2008 was 55,591 tons, with the total production of rice reaching around 33 thousand tons, while in fact, the national rice consumption reached 90 thousand tons in the same year. This means that there was a national rice production deficit of around 57 thousand tons. The national corn production in 2008 was around 102 thousand tons, while the national need was around 108 thousand tons. This means that the corn production still experienced a deficit of only around 6 thousand tons. Those two types of staple food of the East Timorese people still experienced a production deficit, so that the food security becomes the main priority of the development, together with the poverty eradication and establishment of the national stability.

Food insecurity can be broken down into two aspects: inadequate total production of foodstuffs, and poor food quality, which leads to malnutrition. Improving long-term food security remains the biggest single challenge for MAF and other Ministries. Food insecurity is widespread and two-thirds of the rural population, about 600,000 people, experience food deficits at some time during the year. The major urban centers typically have access to enough food throughout the year. Droughts, floods and natural disasters render subsistence farmers vulnerable to intermittent food crises, requiring external food aid.

POVERTY REDUCTION STRATEGY THROUGH THE AGRICULTURAL SECTOR

Agricultural sector is still the main focus of rural development. The main objective of agricultural sector is the improvement of agriculture productivity, the improvement of farmer professionalism, the improvement of community access towards food, market creation to support food security and the improvement of farmers' welfare. The issue so far is that all farmers produce the same commodities, local demand is very low and access to markets outside their region is difficult; hence market is not exist. Based on TLSLS 2007, rural inhabitants' access towards public services in Timor-Leste is far worse than their urban counterparts.

As the sector, which is the main source of income of East Timorese, the agricultural sector is not only demanded to be able to fulfill the national food need, but it should also be able to create welfare for agricultural households. The challenge that is faced by the agricultural sector is that the majority behavior of the farmers are utility oriented and not profit oriented, so that the largest part of the agriculture in Timor-Leste is still subsistence. In the agricultural concept, the subsistence farming has actually a superiority, particularly to maintain the ecosystem balance and environment conservation. It is only that if the subsistence farming dominates the agricultural activities, then the value added and production level produced by this sector is low, so that it will have impacts on the food security and poverty. The low food

security and high poverty rate in Timor-Leste have the consequences of poor Timor-Leste human resource quality, due to the low investment capacity in human capital. This will have impacts on the long term development capacity of Timor-Leste. In addition, the agricultural sector has also a large risk, where the majority of the poor agricultural households do not have the capacity to manage such risk, due to their low knowledge level and capital stock.

The increment of production and agriculture productivity in rural area needs to be implemented in integration by reducing the risks faced by farmers. Intervention of external inputs will result in the decline of farming risks and improvement of production. According to Harmadi and Gomes (2009), in order to reduce the level of risks facing most of rural dwellers, it is therefore necessary to introduce an appropriate exit strategy. This can be done through two main approaches. The first approach is for the Government to intervene in order to reduce the risk level among rural households. This approach can be in the form of applying an integrated value-added method through agro-industrial mechanisms in combination with provision of adequate infrastructure. For example, the reduction of pests and other epidemics and weakening soil fertility can be done through a diversified cultivation pattern with different varieties. Agribusiness is also one example of how a production system could involve a range of activities from inputs, production process, output, to the distribution of the output (or produce) itself.

In a more advanced level, agrobusiness system will produce a higher output. This output will be distributed in three different forms, which are farming households' needs of food (subsistence), to be used as internal inputs (seeds) and to be sold in the market (market oriented). Sold output will generate income for farmers that will be used for non-food consumption and also saving. Rural development plan should be able to anticipate this condition. At the moment, the majority of agriculture activities in Timor Leste still have a subsistence characteristic, because it is targeted for the fulfillment of farmers' own household needs and just a small part is used for seeds. Government intervention can be allocated towards external input from the agricultural sector, such as knowledge on farming (through extension services), the supply of high yielding variety, tractor and other farming equipments, fertilizer and the building of irrigation.

One of important things in the development of agribusiness is market creation. Farmers do not receive incentives to be more productive due to the ineffectiveness of commodity market in rural area and the difficulty in distributing commodity to other areas. Hence, there needs to be the development of rural infrastructure, particularly roads. There are several principles that need to be watched in infrastructure development in rural area. The first principle if infrastructure development is multi-sector, hence it is very necessary to manage the coordination across ministries. The second principle is that particularly for road infrastructure has to be built by connecting small scale economy and higher scale economy. This is like the concept of hub and spoke in transportation economics. For instance, government determines central markets that are connected with several main producers of rice in Timor-Leste. Then, there is a production sub-center that has a linkage with the particular production center. Moreover, production sub-

center has to be linked with the rice production points surrounding it. The third principle if infrastructure has to be supported by the availability of facilities. For instance, roads will be useless without the adequate transportation systems. If road development is not followed by the availability of transportation (supply creates its own demand will not happen), then transportation supply intervention for the distribution of crops has to be done by the government.

When rural farm economy risks decreases, farmers' income can increase. The higher the income is, the higher the marginal propensity to save rural household becomes. As a result, household will have better investment ability, including human resource investment. Forms of human resource investment that they can do are through the improvement of education and the level of household members' health. With better level of education and health, someone will be more productive in doing his economy activities, particularly in working. In addition, the improvement of farmers household income can result in reducing the incidence of poverty, particularly in rural area.

SOCIAL TRANSFORMATION STRATEGY THROUGH THE AGRICULTURAL SECTOR

The social transformation in Timor-Leste is based on democracy principles, where the development is people-centered and people-driven. As explained before, the potential of social conflict in Timor-Leste is currently quite large due to the gap of opportunity in the community to obtain a better life. The agricultural sector has an important role in the social transformation process in Timor-Leste. There are at least 3 strategies used by the government of Timor-Leste to encourage the social transformation of the agricultural community. First is by changing the social behavior from traditional farmers to modern farmers through the conditional in-kind transfer policy for farmers. Second is through the cash transfer program for several community groups, particularly the war veterans and widows. Third is through the national food diversification policy in order to minimize the dependency on rice consumption.

In-kind transfer program

Since 2008, the Ministry of Agriculture of Timor-Leste has implemented the in-kind transfer intervention to the farmers by providing tractors and by introducing the high yielding variety (particularly rice), which has a higher productivity compared to the local variety. In addition, the government disseminated the information concerning the integrated crops management (ICM) to the farmers. All those interventions were intended to encourage the social transformation. The form of social transformation, which was expected from the provision of hand tractors, was the increase of the awareness of the farmers to cooperate in a farming group and to reduce child labor. The low capacity of the farmers to develop their farmland is due to the lack of cooperation awareness among the farmers. In fact, the cooperation, as a form of social capital is an important input for the progress of the agricultural development and may encourage the productivity increase. As the initial step, in 2008 the Ministry of Agriculture distributed the assistance of 1,341 hand tractors to the farmers. The farmers who have the right to receive hand tractors were farmers who were willing to join a farmer group in their villages. Due to the limited amount, those

tractors were provided to the farmer groups and not to individuals. Each group has 10 to 20 farmers as members. If the farmers are unwilling to work in groups, then they will not receive benefit from such hand tractor assistance from the government. This policy was apparently effective, since good cooperation was established in almost every group, either with regard to the allocation of time for the use of tractors as well as their maintenance. This strategy was apparently successful to encourage effective cooperation among the farmers and to assist in increasing their production. As such, the social transformation occurred simultaneously with the increase of the farmer productivity.

The introduction of the high yielding variety and integrated crops management (ICM) to the farmers in Timor-Leste is not something easy. The farmers will not easily trust the use of new varieties, as it is related to the risks that they bear as well as the change of behavior in cultivation. In order to convince the farmers, the high yielding variety is only applied at part of the farmland, and they receive the extension service from the government. In the future, the condition from the government is that the high yielding variety is only provided to farmers who are willing to adopt the ICM and are heading toward market oriented. In addition, the conditional in-kind transfer is also an instrument to introduce the farmers to the use of modern techniques in the agricultural production process.

The extension service is also useful to transform farmers, who have actually no culture as farmers, to become professional farmers. By possessing the culture as farmers, they will be able to work more productive and be able to implement more efficient post harvest activities. The extension service is more focused to subsistence farmers, since they need such intervention the most.

Cash transfer

As a matter of fact, the Government of Timor-Leste is still focusing on addressing poverty and its attendants in Timor-Leste. In general, they use 2 types of cash transfers as the options of the policy strategy on poverty. The first strategy is the unconditional cash transfer for former independence fighters, widows, and orphans. In the face of high inflation, especially in food prices, the Government has proposed the establishing an Economic Stabilization Fund (ESF) of \$240 million in the budget to finance social safety nets to insulate the people from higher prices and thereby a rise in poverty. As part of the national efforts to reduce income inequalities among the most vulnerable groups, the Government has disbursed \$20 to each member of 29,000 registered families. The beneficiaries include mostly the elderly and invalids. The total number of registered families to be served under this package totals 70,000 families. The Government has also established a pension fund for ex-combatants and victims of war. More than 200 beneficiaries have received the pensions and 12,338 more are going to be paid towards the end of this year. A cash transfer mechanism has been set up for 7,000 families under the so-called “Bolsa Mãe” (Mother’s Purse), covering widows and single mothers, aimed at easing their financial burden for better education and nutrition of their children.

The objective of this cash transfer is to reduce the gap of income in the country. This policy is actually not the responsibility of the ministry of agriculture. However, since the majority of the assistance recipients are the citizens in the rural areas, where their life is associated to agricultural activities. Harmadi and Gomes (2008) showed that the implementation of this cash transfer program was significantly successful to reduce the income inequality in Timor-Leste. During the seven-year period, income inequality trends in Timor-Leste have tended to decrease, using the estimates of the Gini index. In 2001, the Gini index was 0.37 but in 2007 it decreased to 0.26 (Harmadi and Gomes, 2008). The decomposition of the income source shows that the majority of the poor population in Timor-Leste depends on the transfer, particularly the government transfer.

The second strategy is the conditional cash transfer, which is currently not implemented yet, but will become a strategy of the ministry of agriculture in the future. In order to maintain the national rice reserve, the government will establish a national logistic board, which functions to stabilize national rice reserve. This board will purchase rice from the farmers with reasonable market price and will make the market intervention in order to maintain the food price stability. Nevertheless, the Timor-Leste government has two simultaneous roles, namely to maintain that the rice and food commodity prices are reachable by the community, and to maintain that the price of un-hulled rice remains reasonable at the farmer level for the stability of the farmer's welfare. The national logistic board purchases rice from the farmers without certain conditions, except the requirement that quality of the purchased rice should adequate. The national logistic board also assists the government in its duty to distribute the cash transfer to the farmers as a form of subsidy for the eradication of poverty. A farmer will receive cash assistance from the government if the concerned sent his children to school and routinely examines the mother and child health.

There are 3 objectives for this conditional cash transfer. First is to improve the purchasing power (poverty eradication) and investment of the farmer, including the ability to develop other businesses other than the main business. For example, a rice farmer can use the subsidy money to develop a chicken breeding or fish pond business. This may establish the diversification of income and reduce the risk of farmers toward the harvest failure of their reliable commodity. Second is that the conditional cash transfer will create the responsibility of the recipient (farmer) toward the subsidy assistance, and improve the human resource quality of the poor population in the long term. The social transformation will occur where the poverty trap will be disconnected. Third is that this policy will force the government to have a larger commitment toward the public service, particularly the education and health in rural areas. The government is required to provide the supporting infrastructures, so that the access of the people to education and health becomes better.

Diversification of the national food

The high dependency on rice consumption causes Timor-Leste to also be able to produce in significant amounts. Therefore, the ministry of agriculture encourages the diversification of the national food

production and tries to develop the food processing diversification. It is indeed not easy to change the habit of the people, which normally consumes rice, to change to the consumption of corn, for example. This social transformation is needed due to the inter-culture gap or the capacity of the community to produce rice in a very large amount of the national demand. In addition, the potential land for rice plants in Timor-Leste is more limited than the land for corn and tubers. Consequently, the dependency on the import from other Southeast Asian countries is very high, while those countries are also maintaining their national food security by limiting the export. This may weaken the food security of Timor-Leste.

The Ministry of Agriculture and other related ministries conducted the cooperation to develop the processing method for food with good nutrition quality, preferred by the community, and massively produced domestic. As such, a consumption combination will exist in the community between rice and non-rice as the staple food. Nevertheless, this transformation process needs a long time and is the policy development phase.

CONCLUSION

A basic question is: can the economic and social gap be handled through policies in the agricultural sector? The agricultural sector is the main job of the majority of the population with low education level, including the former independence fighters, who did not have the opportunity to enter school in the past. The agricultural intervention, which is supported by the rural non-farm economy, is expected to be able to create higher welfare for the farmers. In addition, at the same time the government develops the social security system in order to improve the life of the poor former combatants and war widows, including their families. By focusing the policy strategy on the improvement of income, handling the income inequality and social protection for the poor population in the villages, then the development advantage is not only benefiting the high education groups but also the overall community in Timor-Leste.

The decrease of the income inequality between the rural and urban citizens as well as between the sectoral income groups due to the transfer intervention will reduce the risk of social conflict and accelerate the social cohesion. The euphoria due to the independence needs to be filled by developing the inter-generation and inter-community group togetherness. Although the social transformation needs a long time period, the development of inter-farmer cooperation establishes a large capital in the rural areas and creates larger economic and social benefits. In addition, the political and social stability becomes better due to the establishment of inter-individual trust in the rural areas.

The reduction of child labor will create a social transformation in the long term, since the education opportunity for children from poor households also increases. The ILO Convention strengthens that one of the worst forms of child labor is children working in the agricultural sector. Although there are not any official data regarding the number of children labors in the agricultural sector in Timor-Leste, however it is estimated that the number is very significant. This is due to the fact that the majority of farming

households in Timor-Leste involves almost all family members, including children, to work in the agricultural sector. Moreover, productivity improvement should improve the farming households' welfare; hence the opportunity to increase their share in non-food expense becomes bigger, including the expense of schooling for their children. Nonetheless, if children working in the agricultural sector are stirred to attend formal education, then human capital accumulation in rural area will be better. This clearly proves that independence can be enjoyed by the overall population, without discrimination.

THE FUTURE CHALLENGES IN TIMOR-LESTE

The policy direction for Timor-Leste through agriculture may not be successful if the Government does not take into account what could be called the X-inefficiency factors. The concept of X-inefficiency was introduced and developed by an Ukrainian born American Economist, Harvey Leibenstein, in late 1960s (Leibenstein, 1976 and 1978). As one of the pioneers of (modern) behavioral economics, Leibenstein made an attempt to reformulate microeconomic theory which gave rise to what he called X-(in) efficiency theory. There are several postulates: imperfect markets which result from asymmetric information (mostly in favor of sellers) and monopoly; incomplete production functions and labor markets; discretionary efforts (on the part of workers); rationality as a continuum (rather than always being full) and as psychological phenomenon; and the existence of inert area which implies a range of effort within which the individual is mobile. In his 1978 book, Leibenstein argues that a broader and more general theory than that provided by conventional economics is needed to deal with the problems faced by the LDCs. In his theory, he advocates what is called duo-economics, believing that the LDCs should have a different focus than that offered by conventional economic theory, which he finds less relevant for the economies of the LDCs. For example, the prevalence of market imperfections/failures in most LDCs is closely related to his theory of entrepreneurship. And entrepreneurial skills are quite rare in LDCs and that activities carried out by entrepreneurs are important in determining how well economies operate. To Leibenstein, economic development requires a large supply of gap-filling entrepreneurial skills. A less developed economy most definitely requires innovative entrepreneurs who have the capacity to start firms, or reorganize existing firms, which reduces the level of X-inefficiency. The supply of such entrepreneurship is determined by a set of individuals with gap-filling and input-completing activities, and by "the socio-cultural and political constraints which influence the extent to which entrepreneurs take advantage of their capacities, and the degree to which potential entrepreneurs respond to different motivational states, especially where nontraditional activities are involved" (1978:50).

Given the existence of the discretionary effort, Leibenstein argues that each individual decides (1) the *activities* he will carry out, (2) the *pace* at which he will carry out these activities, (3) the *quality* of the activities, and (4) the *time* spent on the activities. Inspired by this X-(in) efficiency theory, one could wonder what would be the most appropriate approach to develop Timor-Leste's agricultural sector. In the case of Timor-Leste, a farmer may only cultivate one-hectare of land out of three hectares he possesses. The simple reason being that he may not want to end up filling-up his warehouse because this will attract

attention from his neighbors to come and consume freely out of what he has produced with great difficulty. The farmer may not want to be seen as a “rich” person because his warehouse is full of agricultural produce. Another example of this would be in the case of Maria who has dreamed to pursue further education but find it difficult to move on with her plan because of the requirements to look after her aging parents. Against this backdrop, it would seem to be logical to work on incentives to stimulate competitiveness. Most individuals interact with others in their daily living, and therefore the nature of the interactions determines the quantity and quality of their produce.

Due to the inexistence of a “savings” culture, the capacity to accumulate capital is weak. Yet, capital accumulation is necessary for future investment in human resources. The incentives that the government may wish to consider to change this mindset is to provide conditional cash transfers along with strengthening and expanding social services, which most of the rural dwellers are deprived of. Eventually, social transformation can take place in a manner that suits all individuals.

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