AGRICULTURE –BASED ALTERNATIVE LIVELIHOOD FOR THE DEPRESSED COMMUNITIES IN ZAMBOANGA DEL NORTE

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ABSTRACT

Depressed communities in Zamboanga del Norte namely; La Libertad, Siayan and Godod, are agricultural communities. The study identified low productivity as the main reason for the low income of the families in the communities. Low productivity in turn was linked to the farming practices, general topography of the farming communities and marketing practices. The paper proceeds to evaluate alternative agricultural production system as well as livelihood that hinge on agricultural food processing towards enhancing the economic productivity of these communities.

KEYWORDS: Agricultural production system, poverty, food processing

INTRODUCTION

The province of Zamboanga del Norte was identified as the province with the highest poverty incidence in 2003 where more than half of the households (59%) are living below the poverty threshold. Three of the poorest municipalities in this poorest province are: La Libertad, Siayan and Godod which are essentially farming communities (NSCB, 2007). Interestingly, the severely low income of the families in these communities are attributed to the poor agricultural production of the farm who cling to the traditional farming practices of the ancestors. On the other hand, modern farming technique advocated by scientists in agricultural colleges and universities nearby appear to be inaccessible to the farmers who need the advanced technique more urgently.

Recent estimates of the underproduction of agricultural crops e.g. cassava, corn and rubber, in the farming communities reveal that the farms are producing only a little over one-fourth of the optimal production level (DA-BAR 2009). In other words, the potential agricultural production levels of the poorest municipalities are still way higher than the actual production observed over the years. Should the optimal production be achieved by these farming communities, then it is almost certain that a typical household in these areas would have escaped the cycle of poverty.

This paper examines the current farming situations in the three (3) poorest municipalities of Zamboanga del Norte with the end-in-view of identifying areas where modernization can be implemented to enhance production. Secondarily, the potential of the other household members

to contribute economically to the family as a whole is explored through an analysis of feasible agricultural food processing activities.

A FRAMEWORK FOR ANALYSIS

We contend that a two-pronged approach to the problem of raising the economic productivity of the households in the three poorest municipalities in Zamboanga del Norte will suffice to break the cycle of poverty in these areas.

The two-pronged approach targets the farmers themselves and the other members of the households of the farmers working together to raise their economic productivity. The approach is schematically demonstrated below:

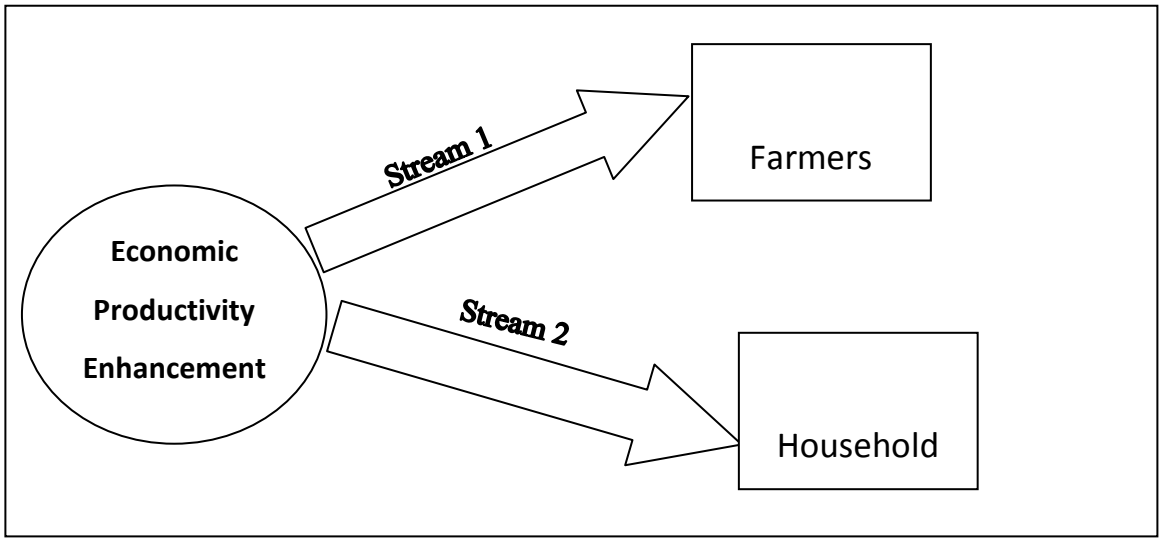
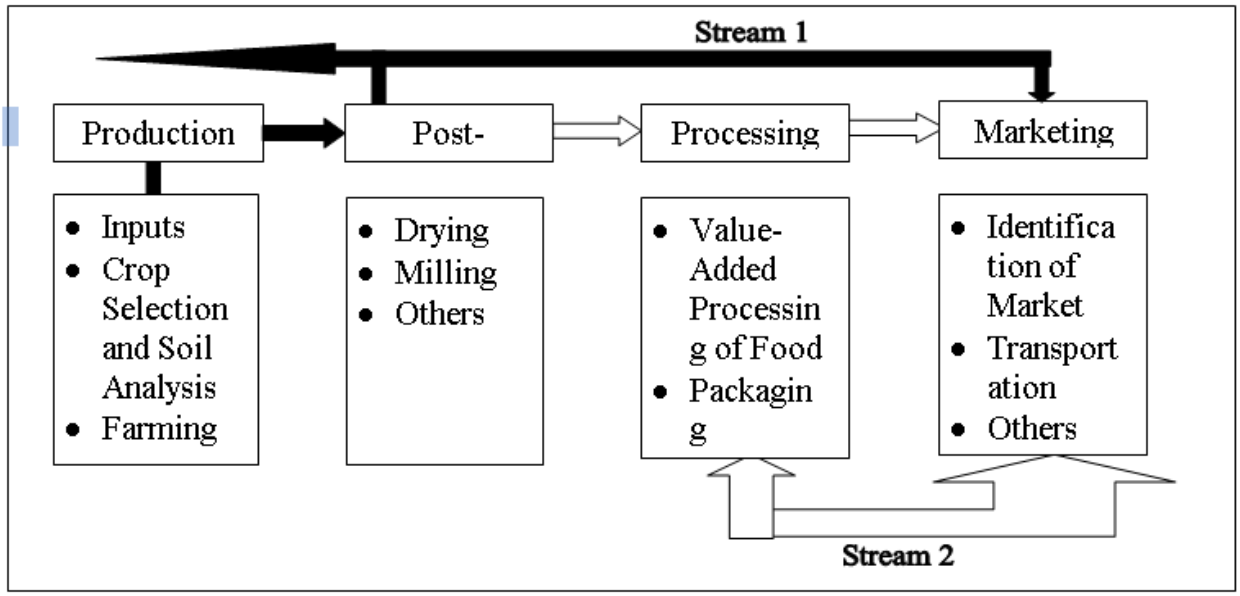


Figure 1 The Two-Pronged EPE Paradigm

The EPE or Economic Productivity Enhancement programs alludes to the agricultural production chain: from farm inputs to the marketing stage of the agricultural products. Figure 2 shows the mechanisms of the EPE as they apply to the two streams of Figure 1.



RESEARCH DESIGN AND METHODOLOGY

The basis for the analysis (and subsequent recommendations) of the EPE approach are the baseline information that were gathered through a descriptive survey approach.

Stream 1. The Farmers

Information on the practices of the farmers relative to the various dimensions of Production (inputs, soil analysis, crop selection, growing and harvesting), Post-Harvest (drying, milling and others) as well as marketing (market selection, transportation and others) were elicited through the survey. These farming practices were then compared with scientific standards to assess the extent to which the farms are under producing. This component of Stream 1 is henceforth be referred to as Agricultural Diagnostics.

One hundred (100) farming households were interviewed from each of the three municipalities for the Agricultural Diagnostic Part. Secondary Data in the Socio-demographic characteristics of the municipalities were likewise obtained.

Stream 2: The Households

A similar Agricultural Diagnostic was employed for Stream 2 using the household members as key informants. In particular, their skills in processing were assessed. Problems on the marketing of processed products were likewise determined and subsequently resolved.

FINANCIAL AND ECONOMIC PROJECTIONS

Rough Financial Projections were made under an optimality scenario i.e, if the scientific standards were followed;

RESULTS AND DISCUSSIONS

Stream 1. The Farmers

Inputs. In all three places studied, inferior seed inputs are used by the farmers while less than 30% used registered open pollinated variety (OPV). This practice accounts for most of the low crop outputs which nonetheless persist because: (a) the registered seeds are more expensive than seeds collected from previous harvest, and (b) the non-registered seeds are observed to be more resilient to climatic conditions than the registered seeds. Even if the registered seeds were provided by the Municipal Agriculture Office (MAO) for free, many farmers are still opted for the native variety for many reasons mainly bordering on resistance to change.

Even granting that inferior seed quality were used by the farmers, the production level could have been improved if appropriate organic fertilizers or additives were used as supplements. Unfortunately, more than half of the farmers in all these localities applied inorganic fertilizers at an average of 47kgs/hectare. The use of inorganic fertilizer may have short-term positive impact on production but they eventually render the soil unsuitable for agriculture in the long run.

The production behavior of the farmers in the localities studied can be described as one that avoids high maintenance effort in crop growing. Thus, they prefer the native varieties of seeds because they have low maintenance needs, are resistant to climatic changes and pest diseases even if their production outputs are predictably low.

Trainings. Trainings and seminars on production have been conducted and attended by 75% of the farmers in these localities. However, it appears that even with these trainings, farmers revert to their age-old farming practices.

Table 1 Present and Ideal Production Practices of the Respondents in La Libertad, Siayan and Godod:

PRODUCTION	**Present Practices**			**Ideal Practice**
INPUTS	**La Libertad**	**Siayan**	**Godod**	
Raw materials	80% used seeds from the previous harvests and from the neighbors harvests Only 20% used registered seeds	Only 10% registered seeds (Open Pollinated Variety) of corn. Planting materials of cassava were from the previous harvests. 80% of the rubber seedlings were provided by the LGU	30% used OPV Planting materials of cassava were from the previous harvests. 65% used native variety of rubber	To increase production, registered seeds of corn should be planted. The budded seedlings or rubber are highly recommended to increase production

		thru the Municipal Agriculture Office. Other farmers still used the native variety.	seedlings	
Additives	72% applied inorganic fertilizer to corn with an average of 44 kgs/hectare	51% applied inorganic fertilizer with an average of 49kg/hectare for corn	50% applied inorganic fertilizer with an average of 51 kgs/hectare for corn	The soil in the area needs fertilizer to increase production. The combination of inorganic and organic fertilizers is ideal for corn under coconut trees
TRAININGS	70% have attended seminars and training in production	75% have attended seminars and training in production	73% have attended seminars and training in production	All should have knowledge in production and processing

Marketing. The number one motivating factor of the farmers to produce more is market. Its absence would mean the death of an industry. The principle of "demand creates supply" could be a good basis for the producers' decision to produce. In the case of La Libertad, the local government had introduced cacao production under coconut trees five years ago. Unfortunately, the weak market mechanism and the absence of the assistance of the government as linkage to both domestic and foreign markets made the program a failure despite the fact that cacao and its processed products were really in demand in the market. The same situation happened when the yellow corn was also introduced in the three municipalities where there was no sure market. This problem can be repeated if the government will still be deaf in providing marketing assistance to the farmers. The intervention of the Non-Government Organizations particularly in the marketing of products could be a great help to lift the families from being poor. In the case of these localities, it appears that the middlemen profited more than the farmers themselves. Direct marketing channels can be opened by the government through the joint effort of the Department of Agriculture and Department of Trade and Industry.

Table 2 Present and Ideal Marketing Practices

MARKETING	**Present Practices**			**Ideal Practice**
DISTRIBUTION	**La Libertad**	**Siayan**	**Godod**	
Direct	No one practiced	No one practiced	No one practiced	Products to be

	direct selling to consumers for corn	direct selling to consumers for corn	direct selling to consumers for corn	sold to the cooperative.
Middlemen	100% sold the corn to the middlemen 100% sold cassava chips to middlemen	100% sold the corn, cassava chips and rubber to the middlemen Trading activity for rubber is in a monthly basis. Regular buying schedule - (28^{th} & 29^{th}) day of the month. Other farmers brought their rubber slab in nearby trading post in municipalities of Tampilisan	100 percent sold the corn, cassava chips and rubber to middlemen	Government should assist in the marketing of the products Budded rubber seedlings have higher production than the non-budded ones
Industry Buyer	No one practiced direct selling to consumers	No one practiced direct selling to consumers	No one practiced direct selling to consumers	
PRICING & COST	The price is low and is controlled by the middlemen The transportation cost is high	The price is low and is controlled by the middlemen The transportation cost is high	The price is low and is controlled by the middlemen The transportation cost is high	
Price per Unit	P15/kg for corn			

Topographic Characteristics. The low productivity of the farmers could not be solely attributed to traditional farming practices. The bio-physical characteristics of the place is very much related to productivity of resources particularly topography (Miller, 2002). PCARRD (1993) enumerated the factors that could either be or beyond the control of the farmers. These are the environment (soil, topography, and climate), socio-economic (tenure and capital) and technical (available technology and management requirements). Siayan and Godod can be productive if the steeply sloping areas are planted with perennial crops or even trees. Looking at the situation of the topographic features, farmers are expected to experience loss of soil fertility brought about by soil erosion, thus low productivity.

Although, the topographic features in La Libertad is flatter but the coconut trees which covered almost all of the agricultural areas are already old and tall enough to produce more fruits. PCARRD (1993) further stressed that the amenability of coconut farms to intercropping, available market, favorable climate, suitable soil conditions, favorable slope of the land, farmers' resources and attitudes, technical and working arrangements, and availability of good planting materials are the important considerations in intercropping coconut. Both permanent and cash crops are very appropriate.

The development in the area can also be linked to the presence of physical assets. In the case of Siayan, the construction of infrastructure projects boosts the economy of the municipality. This is a big factor where the municipality would be lifted from its rank as the poorest in the country. The intervention of the committed leaders has changed the face of the town. This is a great indication that politics in the area is becoming stable and people are becoming socially cohesive. Social cohesion and political stability are important for economic stability, investment and growth, and employment opportunities (UN 2007). La Libertad and Godod have poor conditions of roads which could also be a reason for the difficulty of the farmers to market their produce to the business center.

Table 3 Biophysical and Socio Demographic Characteristics of the Study Areas

Bio-Physical Characteristics	**La Libertad**	**Siayan**	**Godod**
Forest lands/Grasslands	33.5%	44%	59.36
Agricultural Area	66.5%	56%	41.64
Coconut	99.22%		7%
Corn	3.41% (under coco)		29%
Rainfed Rice	0.78%		2.6%
Rubber			13.15%
Topographic features & slopes	Rolling 55% Slope 0-35% 25% flat	Slightly hilly to mountainous	Slightly hilly to mountainous with slopes 3 to 50%
Socio-demographic Characteristics			
Population	7,690	34,588	16,638
Literacy rate	89.42%	64.66%	
Ave. Farming HH Income per annum	P30,000 estimate	P25,000	25,000
Average family size	5	5	5
Road Condition	Rough	concreted	rough

The high percentage of idle labors in Godod and Siayan shows that farmers are dependent on mono cropping system of farming. Farmers during the production period of 3 to 4 months usually took a rest or maintained the cleanliness of the growing crops while waiting for harvests. Their economic activity during this period is varied and doing farm activities in other farms was prevalent in the area with one or four farmers was involved in it. The most number of labor was in La Libertad which comprised 4 of 10 farmers. But among the farmers with economic activities while waiting for harvests, majority were still involved in agricultural production and no member of the household was involved in food processing. With a family of 5, the present economic activity couldn't still lift the farmers from destitution. Household members especially women should be mobilized in other alternative livelihood like processing. In fact, in every seminars and trainings, women have the most number of attendance because they were more available than their husbands. This is a good opportunity that they would be mobilized in doing processing to augment the household income.

In La Libertad, if the cacao production under the coconut trees will be realized, cacao supply will increase. Processing the products into intermediate goods would command higher price in the market. Wives can also process the products into a known Filipino beverage "tablea" which are then in demand in the local market as substitute to coffee. Thus, it could be a good source of alternative livelihood in the Place. Siayan on the other hand is beginning to be known in processing Pangasi wine. This is the identity of the Indigenous People in the place and has been developed as One Town One Product. If some members of the household will enter into this wine industry, the supply would then be circulated not only in the province of Zamboanga del Norte but to the whole country.

Meat processing can also be a good alternative livelihood among the wives of the farmers. Since every household has an average of 8 chickens raised, members of the households can already process some domesticated animals for sale in the local market. Prior to the implementation for the program, wives should be trained or retrained in processing.

Stream 2 The Households

Table 4 Economic Activities done when waiting for harvest

ECONOMIC ACTIVITIES	**La Libertad**		**Siayan**		**Godod**		**Total**	
	Respond-ents (%)	Ave income per day (P)	Respond-ents (%)	A Ave income per day (P)	Respond-ents (%)	Ave income per day (P)	Respond-ents (%)	Ave income per day (P)
NONE	24	0	42	0	53	0	44	
With Economic Activities	76		58		47		66	
Agriculture Based								
Buy and sell	6	1000			1	500	2.3	928
Fishing					10	128	3.3	128
Farm labor	40	150	8	150	19	150	22.3	150
Coco	2	295					1	295
Table 4 cont'd								
Tapping								
Handicraft					2	300	0.67	300
Animal Raising	3	500	24	300			9	322
Cut flower Prdn	4	122	8	200			4	174
Charcoal	4	675					1.3	675
Root crop Prodn	3		15		1	80	9.3	76
Total	63		55		33			
Non Agri-based Livelihood								
Driving	2	250			6	333	3	194
Sari-sari store	8	312	1	100	4	150	4	187
Carpentry	4	250	2	250	2	250	3	250
Mining					2	500	1	167

Total	14		3		14		10	

FINANCIAL AND ECONOMIC PROJECTIONS

Cassava Production. Root crops particularly cassava had been planted at most 10% of the farmers. The farmers first encouraged to make this plant as a livelihood because of less cost of production and availability of the market. However, cassava farmers observed that at the end, they were at a loss. The price decreased to as low as P3.00 during harvest coupled with big deductions due to quality and high moisture content. At the start of 2012, cassava farmers in Siayan were encouraged to produce when they'd heard that a big corporation will buy their products.

To have a stable market, a contract marketing should be done by the growers and the association. The farmers are already members in the People's Organization in their respective barangays, so with the assistance of the municipal agriculture office, the organization will be strengthened. Contract farming is beneficial to both the farmer as well as the contractor. To the farmer, contract farming reduces price risk, to some extent production risk, marketing costs, and uncertainty of credit and helps in acquiring inputs. To the contractor, it helps in ensuring supply of quality product at the right time and at relatively lower cost.

Corn Production. Corn as common crop to the three depressed areas in the province may catch the attention of the agriculture sector in the later years due to declining production. If ever the correct way of farming corn will be practiced, and estimated of P4,000-7,000 of increase in production for 1 cropping.

Rubber Production. The most profitable crop suited to the geographical location of Godod and Siayan is Rubber. Granting that the land owners (64% in Siayan, 45% in Godod) will all plant rubber in exchange of other non productive crops, there is a probability of increasing the farmers income by P900 every month after five years of planting and this will continue to rise every year after.

The 5-year waiting period is short enough as a preparation to a continuous yearly sustainable income. The intercropping with cash crops during the initial 5 years is the best move towards sustainable monthly or seasonal income. Since tenants can never decide whether to plant perennial crop such as rubber, only 64% of the farmers in Siayan and 45% of the farmers in Godod have assurance to be lifted from being poor.

Coconut –Cacao Production. Different scenario is seen in La Libertad. Since the agricultural land in La Libertad is 99% covered with coconut, crop diversification is very appropriate. The coco lands should be intercropped with another perennial crops such as coffee and cacao, and cash crops such as peanuts and corn.

Magat and Secretaria (2007) estimated that as an intercrop of coconut production, cacao (cocoa) at 600 trees/ha, has its annual projected net income/ha: year 1, Php(30,476) (negative income); year 2, Php15,182; year 3, Php47,980; year 4, Php72,491, and year 5 onwards, Php95,111.

Forty five percent of the respondents in La Libertad were landowners. If ever all the land owners will venture into Coconut-Cacao production, all of them will have a sure increase in income. This project if realized would then solve the decreasing production of coconut in the area due to old age. But there should be a strong government intervention in strengthening the local markets and assisting the farmers to foreign markets. There is a need to have a strong market mechanism as a way to sustain production that would eventually create jobs and provide relatively stable income. These interventions should aim at correcting the market failures. Interventions need to tackle causes not symptoms (Maxwell, 1999). He suggested that in designing poverty programs, it is wise to respect the vision of poverty articulated by poor people themselves. In some cases, this may mean implementing measures to increase income. But in others, the priority may be to reduce variability of income, or strengthen women's participation or improve health services.

PRODUCTION ENHANCEMENT

Crops	**Present Average Income**	**Projections**	**Projected Increase in Income**
Cassava Production	Siayan – Ave. Production = 5,000 kgs/ha. at P4.00/kg = P20,000.00 less: 35% cost of production =P13,000	10,000 @ P6.50/kg contract with San Miguel Corporation =P65,000 less 35% cost of production =P42,250	P29,000 (1 year)
Corn Production	La Libertad – Ave. prodn per hectare = 641 kg. at P15 = P9,615 less 50% cost of prodn = P4,808	2,000 kgs @ P15/kg=30,000 less 60% cost of production =P12,000	P7,192 (1 cropping)
	Siayan – Average Prodn per hectare = 267 kg at P15/kg =P4,005 less 50% cost of production =P2,000	1,500 kgs @ P15/kg=22,500 less 60% cost of production =P9,000	P7,000 (1 cropping)
	Godod = Ave. prod'n per hectare = 563 at P15/kg =P8,445 less 50% cost of prodn = P4,222	1,500 kgs @ P15/kg=22,500 less 60% cost of production =P9,000	P4,778 (1 cropping)
Table			
Rubber	Godod - 138kg/ha/mo. Average 7 years at P45= P6,210 less 30% cost of prod'n = P4,347	P4,000-16,000 net monthly income from 6th to 22 years at P45/kg Estimated monthly income for 6 year- old rubber = P4,032 7 year- old = P5,376 9 year old = P7392 10 year old =P9,408 11 year old =12,768	P1,029 (1 month)
	Siayan – 97 kg/ha/mo. Average 6 years old at 45 =P4,365 less 30% cost of prodn. = P3,056		P976 (1 month)
	La Libertad – 110kg/ha/month. Average 10 years at P45/kg less 30% cost of prodn = P3,465		P567

Source for rubber: SMIARC Technoguide. Brochure No. 1. 2007

Processing

Economic Activity	**Income Projections**	
a) Meat Processing***	NET INCOME (PhP)/kg	ROI (%)
Tocino	67.41	50.76
Sk Longanisa	71.53	53.24
Native Longanisa	61.93	41.82
Embotido	122.32	77.57
Sliced Ham	66.57	55.05
Luncheon Meat	34.32	28.15
Tapa	66.51	51.36
Barbecue	85.01	71.44
Cicharon	91.88	99.46
Total	74.00	58.8
b) Wine Processing	NET INCOME (PhP)//JAR (16L)	
Pangasi	2,670	503.77

Source, Tuzon, G. D. Ilocos State Polytechnic College

Meat Processing. Idle labors in the household can be utilized if they are mobilized into processing meat products. With this, the productivity of housewives and out-of-school youth is enhanced and their income-generating power is maximized. Assuming one household member could process 2 kilograms of meat into different types of processed meat a day, he/she gains more or less P150 which is already significant in lifting the people from poverty. However, an individual can hardly penetrate the market unless when they are organized into associations or cooperatives. Women Associations in the municipalities or barangays should be reorganized or activated for this purpose.

Wine Processing (Pangase). Continuous production of Pangase would increase the awareness of the individual consumers about the product. This product is a tourist attraction of the place and can boost the economy of the town. Since the raw materials are readily available in the area coupled with the low cost of production, an association or cooperative can realize a return of P5.00 for every peso investment.

CONCLUSIONS

The low economic productivity of the farmers in the three most depressed municipalities of Zamboanga del Norte is largely attributed to their poor farming practices and the absence of direct market channels for their products. Efforts to enhance their farming practices in the past had not been successful because of the farmers' resistance to change and their overwhelming desire for quick money. Thus, while trainings and seminars on agricultural production had been conducted in the past and attended by over 75% of the farmers, these farm workers reverted to their old ways and practices after the trainings. There is a need to change strategies for these

farmers by first working on value-transformation and behavior modification rather than focusing right away on the technical aspects of farm production. Financial analysis revealed that the farmers are quite inefficient with an efficiency measure of 25%.

REFERENCES

1) Magat, S. V. and M.I. Secretaria. 2007. Coconut Intercropping Guide No. 7. www.pca.gov.ph

2) Maxwell. S. 1999. The Meaning and Measurement of Poverty. ODI Poverty Briefing. Livelihood.odi.org.uk

3) Regalado, E. 2008. 14 of RP's poorest towns in Mindanao. www.philstar.com

4) Tuzon, G. D. Meat Processing Technology for the Ilocanos. Ilocos Sur Polytechnic State College Quiambao, Abner. 2009. Cost and Return Analysis For One Hectare Peanut Production.

5) United Nations Publication. The Employment Imperative. Report to the World Situation 2007. Available at www.un.org.pdf