

The Level of Access to the Help for Catubig Agricultural Advancement Project (HCAAP)

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How to cite this paper: Eduardo L. Ocaña Jr "The Level of Access to the Help for Catubig Agricultural Advancement Project (HCAAP)" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-3 | Issue-4, June 2019, pp.1434-1440, URL: <https://www.ijtsrd.com/papers/ijtsrd25177.pdf>



IJTSRD25177

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ABSTRACT

In the Philippines, poverty alleviation programs concentrate much on the agricultural sector as the backbone of the country's economy as has always been a concern of every development plan of countries and the focus of development economics on problem of poverty. Agriculture is the main source of livelihood of the majority of the people in Northern Samar. That to pull the rural poor out of poverty and to sustain rapid economic growth, a 5.2 billion yen or 3.4 billion pesos allocation for the Help for Catubig Agricultural Advancement Project (HCAAP) was pushed to target the resolution of such issues as poverty, health, and accessibility. Generally, the objective of this research work is to assess the level of access of the farmer- beneficiaries to the Help for Catubig Agricultural Advancement Project (HCAAP) on the farmer- beneficiaries and to identify the HCAAP- related problems encountered by the respondents. This research work is a descriptive- evaluative study that calls for a quantitative method for data collection and analyses using Qualitative techniques like survey employing interview schedule. Purposive sampling was used in selecting the Barangays covered by the five components of the HCAAP then Stratified sampling was used in selecting the respondent- beneficiaries. First, sample size was computed using the formula of Slovin. From that formula, 280 constituted the sample size. With stratified sampling, the five barangays were equally represented. The collected data were treated using frequency counts, percentages, mean, and ranking. It was found out that the HCAAP components were of moderate Accessibility with irrigation and drainage component got the lowest score of only 2.41 interpreted as low accessibility. It was concluded that the project would deny the beneficiaries of the of the access to the components of the HCAAP if it remained uncompleted. Irrigation system and farm-to-market roads were accessible were found useful only to land owners, few businessmen and not to a mere tenant. Hence, implementing agencies should fast-track the completion of other components especially irrigation component and the government to give more land to the landless in the HCAAP service areas.

Keywords: HCAAP, Irrigation, Rural Development Project, Poverty Alleviation Program

INTRODUCTION

A huge part of the collected studies on economic development proposed on how to fast-track a country's Gross National Product (GNP) growth rate. Two major schools of thought have emerged from efforts to answer the question "which sector should serve as the engine of growth- agriculture, or industry?"

Proponents for massive support to the agricultural sector maintain this should be the leading sector since much of the poor in developing countries are found here. A more productive agricultural sector also provides a source of raw materials as well as a ready market for the output of the manufacturing sector.

Another characteristic of developing nations is its concentration on primary production. Primary production refers to the output generated by the agricultural sector, while secondary is the output generated by the industry

section and tertiary production is the output generated by the services sector.

In the Philippines, poverty alleviation programs concentrate much on the agricultural sector as the backbone of the country's economy as has always been a concern of every development plan of countries and the focus of development economics on problem of poverty.

Agriculture is the main source of livelihood of the majority of the people in Northern Samar. But low production and meager income continue to bother the rice farmers. Despite this Agricultural advantage, the province suffers from production shortage of major agricultural products particularly rice.

The increasing poverty in rural communities has been compounded by low agricultural productivity. Such aforementioned problems in agriculture have posed a

challenge to the government and the search for their solutions has always been a great concern of the technocrats.

To pull the rural poor out of poverty and to sustain rapid economic growth, the Help for Catubig Agricultural Advancement Project (HCAAP) was pushed to target the resolution of such issues as poverty, health, and accessibility.

This project of 5.2 billion yen or 3.4 billion pesos is the biggest ever funded of its kind by the National Government, befits to a province which recently ranked number 7 with high incidence of poverty in the country and number 1 in the entire region which, ironically, dubbed as the rice granary of Region 8.

However, in 2012 the Municipality of Las Navas expressed its disinterest in availing the last and final tranche of the fund from Municipal Development Fund Office (MDFO). With only seventy (75) percent of the total loan extended, in 2013 JICA closed the loan of the National Government and could thus be presumed that the project, in so far as majority of the components are concerned, is deemed completed and worthy for assessment.

RESEARCH METHODOLOGY

Locale of the Study

Northern Samar is one of the three provinces composing the island of Samar created on June 19, 1965 by virtue of Republic Act No. 4221. It is situated in the northernmost tip of the island and is divided into two congressional districts.

The survey areas selected are the barangays covered by the HCAAP in the Municipalities of Catubig and Las Navas which are both located in the Catubig Valley.

The HCAAP, for its five components, covers 64 barangays, 28 out of 47 barangays from the Municipality of Catubig and 36 out of 53 barangays from the Municipality of Las Navas. The irrigation component will benefit 1, 303 households.

For irrigation component, it has the service area of 1, 150 hectares in Catubig 3, 050 hectares in Las Navas.

Research Design

This research work is a descriptive- evaluative study attempting to assess level of access to the five components of the HCAAP and related problems encountered by the beneficiaries of the HCAAP.

The nature of the study calls for a quantitative method for data collection and analyses employing. Qualitative techniques like survey employing interview schedule was utilized to assess the level of access to HCAAP's components and the HCAAP- related problems encountered by the beneficiaries.

Sampling Technique

Purposive sampling was used in selecting Barangays from the 64 barangays covered by the five components of the HCAAP. The five barangays which have a total of 934 households that the entire stretch of the irrigation component, from the nearest to the farthest point will have a representative barangay. The household heads in these families were the respondents in this study.

Stratified sampling was used in selecting the respondent-beneficiaries. First, sample size was computed using the formula of Slovin. From that formula, 280 constituted the sample size. With stratified sampling, the five barangays were equally represented. Hence, purposively chosen barangays with big population had bigger sample while those with small population had smaller sample.

The size was equivalent to 33 percent of the population, and was used as basis in apportioning the respondents for each barangay.

Respondents of the Study

The respondents of the study were the 280 beneficiaries in the two (2) purposively chosen barangays in Catubig out of twenty six and three (3) in Las Navas out of twenty one.

The Research Instrument

There were two sets of instruments in this study. One set of instrument was an interview schedule for the beneficiary-respondents which included four parts. Part I dealt with the profile of the respondents. Parts II contained 18 items which assess the respondents level of access to the HCAAP's five components which the researcher conceptualized to suit to a particular question on the HCAAP's implementation. Part III asked about the problems encountered by the respondents with their availment of the HCAAP's services and facilities.

Scoring and Interpretation

Level of Access The beneficiary- respondents' was measured level of access to the HCAAP's five components was measured using a 5- point scale "always" which was assigned 5 points; "frequent", 4 points; "sometimes", 3 points, "seldom", 2 points; and "never", 1 point. The scores obtained by the respondents for each indicator were added to get the weighted mean. The weighted mean of each indicator was interpreted as follows:

Category	Score	Range	Interpretation
Always	5	4.20-5.00	Very high Accessibility
Frequent	4	3.40-4.19	High Accessibility
Sometimes	3	2.60-3.39	Moderate Accessibility
Seldom	2	1.80-2.59	Low Accessibility
Never	1	1.00-1.79	Very low Accessibility

Data Gathering Procedure

The data were gathered personally by the researcher and the accomplished instrument was collated, and the responses tabulated in preparation for the analysis of the data.

Statistical Treatment of Data

The collected data were treated using frequency counts, percentages, and mean.

RESULTS AND DISCUSSION

The profile of the respondents- Beneficiaries

The demographic factors that were considered in this study are the sex, age, household size, landholdings, educational attainment, occupation, and monthly income.

Sex. From among the two hundred eighty respondent-beneficiaries, 183 or 65.35 percent were male and 97 or 34.64 percent were female. This indicates that a great majority of the respondents are male. It can be deduced from the data that husbands or fathers have tacitly assumed the

role of household heads hence, oftentimes they speak on behalf of their families.

Age. Table 1 also shows that 77 or 27.50 percent of the respondent- beneficiaries were 41 to 50 years old; followed by 69 or 24.64 percent were 51 to 60 years old; 61 or 21.79 percent were 31 to 40 years old; 36 or 12.86 were 61 to 70 years old; 33 or 11.79 percent were 20- 30 years old; and 4 or 1.42 percent were 71- 80 years old. The data indicates that most of the respondent- beneficiaries are relatively young with ages within the 20- 30 and 31- 40 age brackets. This finding suggests that they are still physically strong to endure farming activities, hence, they are most likely to benefit from the HCAAP's services and facilities.

Household Size. One hundred and fifty- three or 54.64 percent of the respondents had household size between 6- 10 members, followed by 99 or 35.35 percent had 1- 5 household members and 28 or 10 percent had 11- 15 household members. This data indicates that majority of the respondent- beneficiaries have large families. It can be inferred that the pressure of sustaining a large family will drive the respondent- beneficiary to access to HCAAP's components' services and facilities for higher rice production and for bigger income.

Landholdings. On rice lands, fifty- nine or 43.39 percent tilled areas of less than one hectare; 37 or 27.20 percent had between one and less than two hectares; 22 or 16.19 percent cultivated areas between two and less than three hectares; 11 or 8.09 percent worked on areas between three and less than four hectares; and 7 or 5.14 percent tilled an areas between four and less than five hectares.

On coconut lands, twenty- eight or 41.18 had less than one hectare; 16 or 23.53 percent had between one and less than two hectares; 13 or 19.11 percent farm on areas between two and less than three hectares; 8 or 11.77 percent worked on areas between three and less than four hectares; and 3 or 4.41 percent had areas between four and less than five

hectares. This indicates that not all of the respondent- beneficiaries have landholdings and most have only small areas being cultivated or farmed

Educational Attainment. It could be gleaned from Table 1 that 120 or 42.85 percent attended elementary education while 55 or 19.64 percent graduated from elementary education. Forty- five or 16.08 percent attended secondary education and 32 or 11.42 percent finished high school education. And, 19 or 6.78 percent attended college education whereas 9 or 3.28 percent had successfully graduated from tertiary education.

The data indicates that all the respondent- beneficiaries have undergone formal schooling. However, majority of them have only attained elementary education. It can be inferred that with their low educational attainment, their chances of finding good- paying and stable jobs would also be low.

Occupation. Aside from farming other Respondent- beneficiaries had additional occupations. Table 6 shows that 66 or 23.57 were into livestock producing; 19 or 17.43 percent in store operation; 9 or 8.25 in carpentry; 7 or 6.42 percent as passenger motorcycle drivers; 6 or 5.50 percent as motorboat driver; 4 or 3.66 percent as fresh water mussel divers; 2 or 1.83 were into copra and abaca buying; 2 or 1.83 were barangay officials; 2 or 1.83 percent ventured into money lending; and 1 or 0.91 as rice mill operator. This finding suggests that income from farming will not suffice as main source of income but augmented by other occupation.

Monthly family income. Table 1 also shows that 126 or 45.00 percent of the respondent- beneficiaries had a monthly income between 1,000- 3,000 with 8 or 2.85 percent from 15,001- 20,000. This finding indicates that most of the respondent- beneficiaries have low income to be able to meet basic needs such as food, clothing and shelter. This can be attributed to their educational attainment and small landholdings and the kind of additional job they have which are practically menial.

Table1. Frequency Distribution by Profile

SEX	FREQUENCY	PERCENT
Male	183	65.36
Female	97	34.64
Total	280	100.00
AGE	FREQUENCY	PERCENT
71- 80 years old	4	1.42
61- 70 years old	36	12.86
51- 60 years old	69	24.64
41- 50 years old	77	27.50
31- 40 years old	61	21.79
20- 30 years old	33	11.79
NO. OF HOUSE HOLD MEMBERS	FREQUENCY	PERCENT
11- 15	28	10.00
6- 10	153	54.64
1- 5	99	35.35
SIZE OF RICE LANDS	FREQUENCY	PERCENT
0 to 0.9 has.	19	13.97
1.0 to 1.9 has.	77	56.61
2.0 to 2.9 has.	22	16.19
3.0 to 3.9 has.	11	8.09
4.0 to 4.9 has.	7	5.14

SIZE OF COCONUT LANDS	FREQUENCY	PERCENT
0 to 0.9 has.	21	30.88
1.0 to 1.9 has.	23	33.82
2.0 to 2.9 has.	13	19.12
3.0 to 3.9 has.	8	11.77
4.0 to 4.9 has.	3	4.41
EDUCATIONAL ATTAINMENT	FREQUENCY	PERCENT
College Graduate	9	3.28
College Level	19	6.78
High School Graduate	32	11.42
High School Level	45	16.08
Elementary Graduate	55	19.64
Elementary Level	120	42.85
Occupation (Other than farming)	FREQUENCY	PERCENT
Livestock producer	66	60.55
Store Operator	19	17.43
Carpenter	9	8.25
Passenger motorcycle driver	7	6.42
Motorboat driver	6	5.50
Fresh water clam diver	4	3.66
Copra and abaca buyer	2	1.83
Brgy. Official	2	1.83
Money lender	2	1.83
Rice mill operator	1	0.91
MONTHLY INCOME	FREQUENCY	PERCENT
15,001 – 20,000	8	2.85
10,001 – 15,000	19	6.78
6,001 – 10,000	35	12.05
3,001 – 6,000	92	32.85
1,000 – 3,000	126	45.00

The level of access to the five components of the HCAAP

Irrigation and Drainage Component. Table 2 shows that irrigation system gets 2.41 mean or low accessibility. It indicates that canals have to be constructed to carry water directly to the farms. The left main canal and other lateral canals in the right main canal were not constructed.

Table2. Irrigation and Drainage Component

Statements	Weighted Mean	Interpretation
Irrigation system	2.41	Low Accessibility

Rural Infrastructure Improvement Component. Table 3 revealed that National road, Ferry Landing Rack, and Farm- to market road had very high accessibility with 4.67, 4.55, and 4.2 weighted mean respectively. Las Navas Bridge gets 4.8 or high accessibility. Piped and potable water supply received a very low accessibility with 1.07 and 1.10 weighted mean respectively. It shows National road, Las Navas Bridge, Ferry Landing Rack, and Farm- to- market road are always being used by the respondent- beneficiaries. It also indicates that water supply is poorly implemented.

All of the barangays covered by this study had not provided with sustainable water system by the HCAAP. Barangay Magtuad and Brgy. Sulitan were provided by the Plan International and Brgy. San Jorge by its local government.

Table 3. Rural Infrastructure Improvement Component

Statements	Weighted Mean	Interpretation
National road	4.67	Very High Accessibility
Las Navas bridge	4.8	High Accessibility
Ferry Landing Rack	4.55	Very High Accessibility
Farm- to- market road	4.21	Very High Accessibility
Piped water supply	1.07	Very Low Accessibility
Potable/ Safe water supply	1.10	Very Low Accessibility
Mean	3.4	Moderate Accessibility

Agricultural Support Services. Table 4 displays Training and Seminars with high accessibility interpretation with weighted mean of 4.2. Followed by Agricultural Inputs with 2.23 or low accessibility and Credit Facilities with the lowest weighted mean in the component with 1.07 or have a very low accessibility. This shows that there is an organized irrigators' association and its members were always sent to raining and seminars but there were no establishment or connection to financial institutions for monetary assistance when in farming activities.

Table4. Agricultural Support Services

Statements	Weighted Mean	Interpretation
Training/ Seminars	4.2	High Accessibility
Credit facilities to finance farming operation	1.07	Very Low Accessibility
Agricultural inputs such as fertilizers, pesticides, etc.	2.13	Low Accessibility
Mean	2.47	Low Accessibility

Schistosomiasis Control Component. Table 5 shows that Monitoring and Supervision Visits of DOH Personnel, Drugs to Prevent Schistosomiasis and Reading Materials in Schistosomiasis got a very high accessibility interpretation with a weighted mean of 3.43, 3.83, and 3.60 respectively. This indicates that alongside with visits of the DOH personnel mass treatment were also administered and educational campaign conducted. On the other hand, Public/ Communal Toilet, Footbridge, Snail Control received a very low accessibility interpretation with 1.05, 1.46, and 1.59 respectively. This point out that there were regular visits from DOH or RHU personnel only that communal toilets were not of permanent structure and was not sustained.

Table5. Schistosomiasis Control Component

Statements	Weighted Mean	Interpretation
Monitoring and supervision visits of DOH Schistosomiasis control personnel	3.43	High Accessibility
Public/ Communal Toilet	1.05	Very Low Accessibility
Footbridge	1.46	Very Low Accessibility
Snail control	1.59	Very Low Accessibility
Equipment for Schistosomiasis control	1.83	Low Accessibility
Drugs to prevent schistosomiasis	3.83	High Accessibility
Reading materials on Schistosomiasis	3.60	High Accessibility
Mean	2.74	Low Accessibility

Institutional Development Component. Table 6 shows that Irrigators Association was given a weighted mean of 3.82 or High Accessibility followed by Capability- Building of NGO's and LGU's with 3.4 weighted mean or Moderate Accessibility interpretation.

This indicates that respondent- beneficiaries were benefitted from the Irrigators Association's programs like sending members to seminars and trainings, distribution of inter- cropping seeds and others.

Table6. Institutional Development Component

Statements	Weighted Mean	Interpretation
Irrigator's Association	3.82	High Accessibility
Capability- building of NGOs and LGUs	3.4	Moderate Accessibility
Mean	3.61	High Accessibility

Table7. Summary Table for Level of Access

Statements	Sub- Mean	Interpretation
Irrigation and Drainage system	2.41	Low Accessibility
Rural Infrastructure Improvement	3.4	Moderate Accessibility
Agricultural Support Services	2.47	Low Accessibility
Schistosomiasis control	2.40	Low Accessibility
Institutional Development	3.61	High Accessibility
Grand Mean	2.86	Moderate Accessibility

The HCAAP- related problems encountered by the respondent- beneficiaries.

Irrigation and Drainage Component

Diversion Dams. The Bulao Dam (Dam 2) and Hagbay Dam (Dam 3) are not yet completed and still under construction. Completion of the remaining 2 dams is now under PIP (Pinipisakan Irrigation Project) which is being subsidized by the national government. It follows that the NIA has to wait for the appropriation of the amount to complete the construction of the said dams.

Irrigation and Canals. The left main canal that would serve the barangays on the left side of the Catubig River is unimplemented hence, irrigation water is unavailable to the beneficiaries in those said barangays.

However, in the right canal, lateral canals are still to be constructed, even if there is a main canal, irrigation will not serve the farms without water pumps to get water from the main canal.

Demonstration Farms. Demonstration farms were established at the outset of the HCAAP but the areas used were already returned back to the owners of the land for their own farming activities.

Rural Infrastructure Improvement Component

Water Supply. The five barangays covered by this study were not served by the HCAAPs water supply component. Although Brgy. Hangi, Magtuad, and Sulitan had present potable water access it is part of the projects of Plan International. The water system of San Jorge was implemented by the local government of Las Navas but not as part for HCAAP. There were implementations of the water system when the HCAAP was started in Brgy. San Jorge and Hangi but were not finished and still unutilized.

Agricultural Support Services Component

Farm- to- market road. The 9.04 kilometer Las Navas- Bulao- Magsaysay- Hagbay road was completed. However, the road only served the barangays between the poblacion and Hagbay Dam and is not available to some barangays covered by the HCAAP.

Credit Facilities.

Since the beginning of the project, no credit facilities were established by the HCAAP for the farmers to provide financial assistance.

Schistosomiasis Control Component

There were visits from the DOH personnel to barangays covered by the HCAAP to sustain its schistosomiasis eradication campaign now under the Regional Health Unit (RHU) of every municipality.

The RHU together with the Barangay Health Workers of the barangays concerned administer drug for the schistosomiasis mass treatments. In Catubig mass treatment is being held in July of every year. Health Education is also conducted but not frequently.

Public toilets should be implemented in 76 places and Communal Toilet in 589 places. Two public toilets still stand in Brgy. Hangi and Brgy. Sulitan. However, communal toilets could no longer be found in the 5 barangays covered by this study as those were temporary in nature. The beneficiaries were just given a toilet bowl, pipe, and 1 sack of cement sufficient to cover the hole to be used as septic tank.

Institutional Development Component

Irrigators Association (IA). Only three irrigators association were organized in lieu of the 12 IA's targeted by the HCAAP's implementation. The three IA's are the following: Pinipisakan IA, Haremasan IA, and Robasan IA.

Among the three IAs, it is the Robasan where Brgy. San Jorge is a part IA that is well established.

Table8. Frequency Distribution of HCAAP- related Problems encountered by the respondents

	FREQUENCY	PERCENTAGE
Irrigation and Drainage		
Dam 2 and 3 are not yet completed	134	47.85
No Lateral canals	118	42.14
Left main canal was not constructed	67	23.92
Rural Infrastructure Improvement		
There was water system at the start but was not sustained	228	81.42
Could not use ferry landing rack as it is located not in their barangay	162	57.86
Farm- to- market road is partly unserviceable in rainy season	153	54.64
No farm- to- market road is constructed from their barangay	147	52.5
Water system was not implemented	52	18.57
Agricultural Support Services		
They are not aware of any Research Center	257	91.79
They were not recipient of any Extension activities and Training	172	61.42
Schistosomiasis Control		
They did not see any footbridge in their barangay	174	62.14
Communal Toilets are already destroyed	165	58.93
They had not seen snail control Being implemented	137	48.93
No Public and Communal toilets were put up	115	41.07
They only once seen snail control being implemented	63	22.5
Institutional Development		
They are not aware of any capability building activities of NGOs and LGUs	206	73.57
Members of irrigators' association rarely meet	117	41.79
Irrigators' association is not functional	109	38.93

CONCLUSIONS**Based on the findings of the study, the following conclusions were drawn:**

Majority of the populace in the Municipalities of Las Navas and Catubig were from the agricultural sector who are poorest in the entire region and need even basic services from the government.

The HCAAP was to be completed for the progress of the rural sector especially farmers who are the principal food producer in the province.

Nevertheless, this project was marred by many problems that lead to the non-completion of the other infrastructures like the remaining two dams and irrigation canals. The problem affects the beneficiaries as it denies what they could enjoy from the services of the HCAAP.

Some of the components had been accessible to many but it greatly benefits to just few individuals. Irrigation system and farm-to-market roads were only advantageous to landed families and businessmen as the completion of the farm-to-market road made their investment nearer to the barangays.

Finally, distribution of land to the landless should be had for irrigation system will only benefit and secure to those with lands of their own.

RECOMMENDATIONS

Based on the findings of the study, it is recommended that:

1. The NIA should fast track the completion of the Bulao and Hagbay Dams and canals.
2. The DOH should provide Communal toilets in permanent character to avoid waste of money and time.
3. The DA should establish linkage with financial institutions to help the farmers in their needs for capital.
4. The LGU should remain a part of sustaining the water system despite its turn over to the Barangay Water and Sanitation association (BAWASA).
5. This study focuses only on accessibility but did not delve on how the budget was utilized with other components remain unimplemented, hence, the need for further study.

Reference cited

- [1] Adanza, E. G. 2006. Research Methods: Principles and Applications. Manila, Rex Book Store.
- [2] Alicante, E. L. 1981. Social and economic sustainability of communal irrigation systems in Iloilo Province. A Masteral Thesis. UPLB.
- [3] Balanlay, B. 1997. Farm Productivity Analysis and Socio-Economic Impact Assessment of Irrigation Programs on Rice Farming in Northern Samar. Unpublished M. S. Thesis. UEP.
- [4] Belshaw, H. 1959. Agriculture Credit for Economically Underdeveloped Countries. FAO Agricultural Studies No. 46. Rome.
- [5] Co, Edna, et. al. 2007 Philippine Democracy Assessment: Economic and Social Rights. Pasig City, Anvil Publishing Inc.
- [6] Colander, D. 2006. Macroeconomics. New York, McGraw-Hill. Department of Agriculture. Farm-to-Market-Road Network Plan.
- [7] David, C. C. and Otsuka, K. 1994. Modern Rice Technology and Income Distribution in Asia. IRRI.

- [8] De Datta, S. K. 1981. Principles and Practices of Rice Production. John Wiley and Sons.
- [9] Galit, M. D. C. 2014. Northern Samar: Our Home. Quezon City, Write It Right Publishing.
- [10] Gonzales, L. S. Management Turnover of a Pump Irrigation System in the Philippines. International Irrigation Management Institute.
- [11] Fayol, H. 2010. General and Industrial Administration. London, Sir Isaac Pitman & Sons, Ltd.
- [12] Formilleza, E. 1998. Agricultural Growth as a Development Strategy to Poverty Alleviation.
- [13] Guidelines for watershed management and development in the Philippines. 1999. PCARRD - DOST- DENR- FMB- DA- UPLB- CFNR- FDC/ ENFOR,
- [14] Help for Catubig Agricultural Advancement Project. 2011 Progress Report.
- [15] Hoque, M. Z. 1984. On-Farm Research and Management. IRRI.
- [16] International Rice Research Institute. 1982. Rice Research Strategies for the Future.
- [17] Israelsen, O. W. and Hansen, V. E. 1962. Irrigation Principles and Practices. John Wiley and Sons.
- [18] Kahayon, A. H. and Berva M. R. T. 2004. Psychology: Towards a New Millennium. Manila, National Bookstore.
- [19] Mallillin, R. B. Sr. Systems Thinking. A Paper Delivered during the 2nd National Research Congress. UST, Center for Educational Research and Development. April 24- 25, 2003.
- [20] Manasan, R. G. 2004 Analysis of the President's budget for 2003: Deficit in Revenues leading to a deficit in services.
- [21] Mellor, J. W. 1966. The Economics of Agriculture Development. New York, Cornwell University Press.
- [22] Memorandum on HCAAP between JBIC and Executing Agencies of the Project. 2001. Annex III.
- [23] National Irrigation Administration. A Training Manual on Irrigation System Management.
- [24] National Statistics Office Report. 2004.
- [25] Northern Samar Provincial DOH Office. 2010. Active Case Finding Report.
- [26] Philippine Environment Monitor. 2003. World Bank
- [27] Provincial Government of Northern Samar. 2010. Governor's Report.
- [28] Provincial Health Office. 2009. Report.
- [29] Republic Act 8435 or the Agriculture and Fisheries Act of 1997
- [30] Richey, C. B., et. al. 1961. Agricultural Engineers Handbook, McGraw-Hill Book Company.
- [31] Sen, A. 1999. Development as Freedom. New York, Alfred A. Knopf.
- [32] Todaro M. P., Economic development. 1995. London, Longman Publishing.
- [33] World Bank. 1991. World development report. New York, Oxford University Press. p.4.
- [34] World Health Organization- United Nations Children's Fund. 10 November 2004. Report.