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## **THE SOCIO-ECONOMIC IMPACT OF THE HELP FOR CATUBIG AGRICULTURAL ADVANCEMENT PROJECT (HCAAP)**



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### **Abstract**

Development must not only focus on economic growth expressed in rosy figures of GDP and GNP. The economic gains of the rich as expected by economists, must “trickle down” down to the grass roots. It is along this reality that prompted the national government and development planners to look for strategy in which the marginalized which constitute the biggest number of the population in the Third World countries become recipients of development initiatives. Northern Samar, one of the poorest provinces in the Philippines, has been a recipient of the Help for Catubig Agricultural Advancement Project (HCAPP), a project of 5.2 billion yen or 3.4 billion in pesos allocating 2.4 billion pesos alone to irrigate 4, 550 hectares of agricultural lands to spur agricultural development in the Catubig Valley area of Northern Samar. This research aimed to determine the level of socio-economic impact of the HCAAP and related problems. The areas covered by the HCAAP were the Municipalities of Catubig and Las Navas both located in the Catubig Valley. A descriptive-evaluative study, utilized quantitative techniques like survey employing interview schedule for data collection and analyses. The respondents were beneficiaries from Municipality of Catubig, and Las Navas. Purposive and stratified sampling was used in selecting barangays and respondent-beneficiaries respectively. It was found out that the income of the beneficiaries is still low since they have availed or accessed to HCAAP services and facilities and do not suffice to meet the economic needs of most of the respondent-beneficiaries, nor send their children to tertiary education so they have to resort to other occupation. The respondents’ level of living also has not improved. Main problem encountered by the respondents were the non-completion of other two dams, main canals, and lateral canals. It was concluded that irrigation component is much beneficial to land owners than farmers, farm-to-market roads only converted lands from agricultural to commercial and residential, and other project’s sub-components have to be totally completed to serve the beneficiaries of the services and facilities it will offer. Hence, it is recommended that the implementing agencies should push for the completion of the project to benefit the larger remaining service areas.

**Keywords:** HCAAP; Irrigation System; Rural Infrastructure; Schistosomiasis.

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## 1. Introduction

Development is multi- dimensional. It is not only measured by Gross National Product (GNP) and Gross Domestic Product (GDP) which have been found inadequate measures of authentic progress, human welfare, and development.

The problem with the present national accounting practices of computing GDP is they do not take into account the distribution of wealth and income so that the higher growth rates registered may be mainly the result of the rich becoming richer, with the poor poorer and even increasing in number. On the other hand, a country may suffer a decline in GDP but actually attain progress in human welfare or development.

Moreover, upward trend in GNP and GDP, the peso's exchange rate, OFW remittances, direct foreign investment, and upbeat stock market are misleading economic indicators where there is gross inequality in the distribution of wealth.

Development must not only focus on economic growth expressed in rosy figures. The economic gains of the rich as expected by economists, must "trickle down" down to the grass roots. But this "trickling down" did never occur. It is along this reality that prompted the national government and development planners to look for strategy in which the marginalized which constitute the biggest number of the population in the Third World countries become recipients of development initiatives. Hence, if the 60s was seen as GNP- driven, the 70s was human development- focused. In this decade, the main concern was whether people have adequate food, safer shelter, health, education, and occupation, not whether the GNP has risen or fallen. Development was no longer defined as economic growth measured by the gross national product. The term began to assume a deeper meaning, the improvement of the quality of life of the individual.

To pursue this human development goal, governmental intervention in the form of massive development program financed by international banking institutions came rushing in to countries in the Global South like the Philippines, a developing country.

Northern Samar, one of the poorest provinces in the Philippines, has been a recipient of big development package, the first of which was the Northern Samar Integrated Rural Development Program (NSIRD) in the late 70s. Again, in 2002 the Help for Catubig Agricultural Advancement Project (HCAPP) was implemented to spur agricultural development in the Catubig Valley area of Northern Samar, a goal which NSIRD failed to realize.

By virtue of a memorandum, between Japan Bank of International Cooperation (JBIC) and the implementing agencies, the HCAAP was funded on a loan of 5.2 billion yen or 3.4 billion pesos from now Japan International Cooperation Agency (JICA). It is composed of the following five components: 1. Irrigation and Drainage Component, 2. Rural Infrastructure Improvement and Rural Water Supply Component, 3. Agricultural Support services Component, 4. Schistosomiasis Control Component, and 5. Institutional Development Component. The seven implementing

agencies were National Irrigation Administration (NIA), Department of Agriculture (DA), Department of Health (DOH), Department of Public Works and Highways (DPWH), Provincial Government of Northern Samar (PGNS), Municipality of Catubig, and the Municipality of Las Navas.

The HCAAP is one of the biggest project ever funded project by the national government for rural development. But as to whether or not this project has contributed to the socio- economic status of the farmer- beneficiaries remains unanswered since no empirical investigation has been conducted yet that will disclose HCAAP's impact on the socio- economic of the people for whom it was implemented. Hence, this study.

## **2. Methodology**

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 in Catubig, it has the service area of 1, 150 hectares covering 13 barangays and 14 barangays for health component.

In Las Navas, the irrigation component of 3, 050 hectares serves 26 barangays. For health component: 10 barangays.

This research work is a descriptive- evaluative study attempting to assess level of socio- economic impact of the HCAAP to the beneficiaries and HCAAP-related problems encountered by the beneficiaries of the HCAAP.

The nature of the study calls for quantitative methods for data collection and analyses.

The quantitative techniques like survey employing interview schedule was utilized to assess the level of socio- economic impact and the HCAAP-related problems encountered by the beneficiaries.

Purposive sampling was used in selecting the five (5) 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 had 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 lists of beneficiaries were taken from the barangay secretary and barangay nutrition scholar of the purposively chosen barangays.

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. Barangays Magtuad and Sulitan were chosen for Catubig and Barangays Hangi, San Jorge, and Tagab-iran for the Municipality of Las Navas.

The instrument was an interview schedule for the beneficiary-respondents which included three parts. Part I dealt with the profile of the respondents. Part II contained a set of different items related to the level of socio-economic impact and level of living of the HCAAP's five components on the respondents. This 99-level of living item is an extended version of the instrument developed by Al- Kholy and used by Balanlay. Lastly, Part III asked about the problems encountered by the respondents with their availment of the HCAAP's services and facilities.

The English version of the instrument was translated into Ninorte Waraynon for easy understanding of the respondents.

To assess the level of socio-economic impact of HCAAP's five components on the respondents, four major indicators- health, education, and income, and level of living were used. Certain points were assigned based on the extent and quality of improvement the respondents experienced with their access to HCAAP's five components.

The total score obtained by the respondent-beneficiaries from the income indicators were totaled to determine whether the socio-economic was "very high", high "average", "low" or "very low", categorized as follows:

Range	Score	Category
20,001-50,000	5	Very High
10,001-20,000	4	High
6,001-10,000	3	Average
3,001-6,000	2	Low
1,000-3,000	1	Very Low

Answers of the respondents on the economic activities, health improvement, and education improvement were counted determining which of the different items received much response.

A separate analysis on the level of living was made to determine whether their access to HCAAP's component had contributed to the improvement of the respondent- beneficiaries' level of living. The level of living scores obtained by the respondent-beneficiaries before their availment of the

HCAAP's services and facilities were compared with the level of living scores obtained after the availment of the HCAAP's services and facilities. If the post-availment score was bigger than the pre-availment, the level of living was interpreted as "has improved" if post-availment score was smaller than or just the same with pre-availment score, the level of living was interpreted as "has not improved". The level of living was categorized as follows:

Score	Category
Post-availment score higher than pre-availment score	Has improved
Post-availment score was just the same with or smaller than pre-availment score	Has not improved

To ensure the validity and reliability of the instrument, it was pre-tested with farmers in three barangays of the Municipality of Catubig. These barangays are not covered by the HCAAP. After the pre-testing of the interview schedule, it was revised based on the comments and inputs of pretest respondent-beneficiaries.

Likewise, the instrument was critiqued by experts in the University of Eastern Philippines, Catarman Northern Samar, Philippines. The revised and improved schedule was then administered to the respondents.

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

### 3. Results and Discussion

All basic data were gathered from the 280 respondent-beneficiaries. The sample size was computed from a population of 934 with a five percent margin of error. The size was equivalent to 33 percent of the population, and was used as basis in apportioning the respondents for each barangay.

#### The Profile of The Respondents-Beneficiaries

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. Based on the mean of 46 years old, above the mean was considered as old and the mean were considered as young. This finding shows that most of the respondent-beneficiaries are within the young brackets. Also, 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 has a mean of 6.7 which is above the average household size of 5.2 as set by the National Statistics Office of Northern Samar. 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 area 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 an area 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. This confirmed the findings of Sen that factor such as illiteracy relates to diminished income and capability.

**Occupation.** Aside from farming other Respondent-beneficiaries had additional occupations. Table 1 shows that 66 or 23.57 were into livestock producing; 19 or 17.43 percent in store operation; nine (9) or 8.25 in carpentry; seven (7) or 6.42 percent as passenger motorcycle drivers; six (6) or 5.50 percent as motorboat driver; four (4) or 3.66 percent as fresh water mussel divers; two (2) or 1.83 were into copra and abaca buying; two (2) or 1.83 were barangay officials; two (2) or 1.83 percent ventured into money lending; and one (1) or 0.91 as rice mill operator. This finding suggests that income from farming does not suffice as the main source of income but augmented by other occupation. Sen also confirmed that the enhancement of human capabilities tends to go with productivities and earning power.

**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, barely 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. The findings likewise confirmed the conclusions of Sen that intertwining factors, economic power and capabilities explain the link between the right to food and to health, food, and housing.

Table 1: Frequency Distribution by Profile

<b>Sex</b>	<b>Frequency</b>	<b>Percent</b>
Male	183	65.36
Female	97	34.64
<b>Total</b>	<b>280</b>	<b>100.00</b>
<b>Age</b>		
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
<b>No. of Household Members</b>		
11- 15	28	10.00
6- 10	153	54.64
1- 5	99	35.35
<b>Size of Rice Lands</b>		
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
<b>Size of Coconut Lands</b>		
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
<b>Educational Attainment</b>		
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
<b>Occupation (Other than farming)</b>		
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
<b>Monthly Income</b>		
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 socio- economic impact of the HCAAP on the respondent-beneficiaries

Increase in Income. Table 2.a shows that the income of the beneficiaries is still low since they have availed or accessed to HCAAP services and facilities with only 123 or 0.43 weighted mean indicated their income had increased.

In Table 2.b also shows that out of 280 HCAAP's respondent-beneficiaries, 99 with very low interpretation declared that their income increased between 1,000 to 3,000 pesos followed by 31 with low interpretation between 3,001 to 6,000 pesos and 4 with average interpretation had an increase in monthly income between 6,001 to 10,000 pesos.

This indicates that most of the beneficiaries had not increased their monthly income after the implementation of the HCAAP.

Table 2.a: Frequency Distribution by Increase in Income

Increase in Income	Frequency	Weighted Mean
NO	157	0.57
YES	123	0.43
<b>TOTAL</b>	<b>280</b>	

Table 2.b: Frequency Distribution by Increase in Income (in pesos)

Increase In Income	Frequency	Interpretation
1,000 - 3,000	99	Very Low
3,001 - 6,000	31	Low
6,001 – 10,000	4	Average

Economic Activities. Table 2.c shows that aside from farming, the respondent-beneficiaries were into economic activities. Sixty-six (66) or 23.58 venture as livestock producers followed by 19 or 6.79 percent as store operators. This indicates income from farming activities do not suffice to meet the economic needs of most of the respondent-beneficiaries that they have to resort to other occupation.



Table 2.c: Frequency Distribution by Economic Activities

Economic Activities	Frequency	Rank
Livestock producer	66	1
Store Operator	19	2
Carpenter	9	3
Passenger motorcycle driver	7	4
Motorboat driver	6	5
Fresh water clam diver	4	6
Copra and abaca buyer	2	7
Brgy. Official	2	8
Money lender	2	9
Rice mill operator	1	10
Brgy. Official	2	8

Health Improvement. The multiple responses in Table 2.d show that Rank 1 was the respondent-beneficiaries have adequate food with frequency of 263 while 62 as rank 6 declared to need vitamins, milk and fruits.

This indicates that the respondent-beneficiaries always assure of a three-meal a day but do not prioritize buying vitamins, milk, and fruits.

Table 2.d: Frequency Distribution by Health Improvement

Health Improvement	Frequency	Rank
We now have adequate food enabling us to lead a healthy and active life	263	1
Family members no longer suffered from communicable diseases and diseases like diarrhea	215	2
We can now afford to go to a doctor/ hospital for our check-up and medication of sickness.	198	3
Family members are no longer sickly	194	4
Our children are not undernourished	78	5
We can now buy vitamins, milk, fruits and other nutritious food	62	6

**Education Improvement:** Table 2.e shows that in rank number 1, all of the respondent-beneficiaries are very much responsive of the need to educate their children by sending them at least in the primary and secondary level. It is followed by 263 as rank number 2 who claimed that their children had improved in school.

The table nevertheless indicates that with the income of the respondent-beneficiaries they can afford to send their children to basic education but cannot sustain to tertiary education as manifested in rank number 5 that 15 earned a college degree.

Table 2.e: Frequency Distribution by Education Improvement

Education Improvement	Frequency	Rank
All my children who are at school age are in school.	280	1
School performance of our children have improved	263	2
Our children do not have to walk anymore for hours to reach school.	274	3

Our children can now buy school requirements like books, uniform, attend in co- curricular activities without resorting to lenders.	272	4
Our child/ children already earned a college degree.	15	5
<b>Multiple Responses</b>	<b>n=1,104</b>	

Level of Living. Table 2.f to Table 2.r shows that all of the respondents said that their level of living “has not improved”. It indicates that the acquired properties of the respondent-beneficiaries after the availment of the HCAAPs services and facilities cannot offset the properties they had before the implementation of the HCAAP. This confirmed the findings of Todaro that Third World countries target economic growth but the level of living of the ordinary people remained unchanged, signaling that there was something very wrong with the narrow definition of development.

Table 2.f: Level of Living Score for Land Ownership

	<b>Before Availment</b>	<b>After Availment</b>
Rice Land	121	7
Coconut Land	117	15
Residential Land	192	29

Table 2.g: Level of Living Score for House Construction Materials

	<b>Before Availment</b>	<b>After Availment</b>
Pure concrete	24	3
Concrete and wood	52	8
Pure wood	78	11
Wood and bamboo	94	6
Bamboo	32	

Table 2.h: Level of Living Score for House Roofing Materials

	<b>Before Availment</b>	<b>After Availment</b>
Galvanized iron	86	9
G.I. sheets and nipa shingles	44	4
Plain G.I. sheets and nipa shingles	8	
Pure nipa and anahaw shingles	142	
Coconut and cogon grass		

Table 2.i: Level of Living Score for Toilet Facility

	<b>Before Availment</b>	<b>After Availment</b>
Flush toilet (ceramics)	59	21
Flush toilet (cement)	71	14
Water sealed squat toilet	97	9
Antipolo type/ open pit	41	2
Unenclosed/ open type	12	

Table 2.j: Level of Living Score for Seating Furniture

	<b>Before Availment</b>	<b>After Availment</b>
Sala set (upholstered)	19	3
Sala set (narra/ wood	81	5
Iron chairs	4	
Rattan/ plastic chairs	56	8
Bamboo chairs	34	12
Wooden/ bamboo benches/ stools	86	

Table 2.k: Level of Living Score for Sleeping Paraphernalia

	<b>Before Availment</b>	<b>After Availment</b>
Bed with mattress	9	2
Bed with mat only	93	13
Canvass or cots	21	6
Mattress only	34	27
Palm mat only	123	118

Table 2.l: Level of Living Score for Light Facility

	<b>Before Availment</b>	<b>After Availment</b>
Solar generated		2
Electricity/ generator set	207	58
Battery generated		1
Gas lamp	73	12
Coconut oil/ candles		

Table 2.m: Level of Living Score for Cooking Facility

	<b>Before Availment</b>	<b>After Availment</b>
Electric stove	2	
Gas stove	26	13
Wood or charcoal fired stove (with blower)	22	7
Ordinary wood or charcoal fired stove	79	26
Improvised iron ring/ triangle	151	

Table 2.n: Level of Living Score for Appliances

	<b>Before Availment</b>	<b>After Availment</b>
Desktop computer		1
Laptop	2	5
TV with satellite disc/ player	57	21
Refrigerator	26	13
Stereo component	10	8
Cellphone	32	47
Electric fan	19	24
Transistor radio	35	18

Table 2.o: Level of Living Score for Vehicles

	Before Availment	After availment
Truck		
4-wheeled car/jeepney		
2-wheeled vehicle with side car	6	
2-wheeled vehicle only	22	7
Racer bike		1
BMX bike	4	2

Table 2.p: Level of Living Score for Farm Machineries

	Before Availment	After Availment
4-wheeled tractor		
Kuliglig	13	1
Turtle tractor	27	9
Chain saw	15	3
Plow	68	14
Sprayer	19	6

Table 2.q: Level of Living Score for Water Vessel

	Before Availment	After Availment
Basnig	1	
Passenger motor launch	1	
Motorboat	5	1
Banca	12	3

Table 2.r: Level of Living Score for Ownership of Livestock

	Before Availment	After Availment
Carabao	83	17
Cow		2
Pig	24	62
Goat	13	3
Fowls	94	130

### 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 fully due to stoppage of the implementation of HCAAP. Completion of the remaining 2 dams is now under PIP (Pinipisakan Irrigation Project) which is under subsidy by the national government. It follows that the NIA has to wait for the appropriation of budget for 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 has not implemented making irrigation water 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 other farms as without those lateral canals water will not reach to farms. The same problem occurred in Brgy. San Jorge and the beneficiaries were forced to utilize water pumps to get water from the nearby main canal.

**Demonstration Farms:** Demonstration farms were established at the start of the HCAAP in Brgy. Del Pilar to serve the beneficiaries from Brgy. Tagab-iran and Brgy. Hangi; Brgy. San Jorge for the beneficiaries in nearby barangays; and Brgy. Sto. Tomas for Brgy. Magtuad and Brgy. Sulitan. The areas used for demonstration farms 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 access to potable water, 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 a counterpart for HCAAP. There were implementations of the water system when the HCAAP was started in Brgy. San Jorge and Hangi but were not continued and presently unutilized. As part of the HCAAP component, water system should have been implemented in 20 barangays in the Municipality of Catubig and on 24 barangays in the Municipality of Las Navas.

### **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. It is not available mostly to barangays covered by the HCAAP like Tagab-iran, Magtuad and Sulitan. This confirms the findings of Rodriguez that access to infrastructure could only help, but will not completely eradicate poverty.

**Credit Facilities:** No credit facilities were established by the HCAAP for the farmers to provide financial assistance for farm activities. This confirms the findings of Tullao and Formilleza that the great majority of the people in the rural area do not have the necessary capital to partake in any government-initiated projects. Hence, only a small group of farmers is able to adopt the new varieties, those with resources required by the new technologies or those with the ability to take advantage of government services and inputs which are limited in quantity. The consequence would be a decline in the income of the small peasants and the increase of income of farmers belonging to the upper income bracket. Government facilities are availed of by big landowners and not by the small farmers. The small farmers who are generally illiterate and within the poverty threshold do not have adequate know-how to avail themselves of credit facilities of cooperatives and government banks.

### **Schistosomiasis Control Component**

There were visits from the DOH personnel to barangays covered by the HCAAP to sustain its schistosomiasis eradication campaign. The Regional Health Unit (RHU) of every municipality is now the responsible unit for the sustainability of this component due to devolution of some personnel in the Regional Health Office.

The RHU, together with the Barangay Health Workers of the barangays concerned, administered medicines for the schistosomiasis mass treatments. In Catubig mass treatment is being held in July of every year. Health Education is also conducted but in a rare opportunity.

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. Communal toilets were either washed out by floods or weathered by time as the housing was made of light materials. 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.” This confirmed the findings of Manasan that public health, particularly in the rural and poor areas, has suffered most from the severe lack of resources.

### **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, Haremanan IA, and Robasan IA. Every IA is composed of 3 or 4 barangays and its names were combined for the name of the association.

Among the three IAs, it is the Robasan where Brgy. San Jorge is a part IA that is well-established. It has functional organization and officers evidenced in the regularity of monthly meetings, sending members to seminars and trainings, providing insurance to farm activities, and giving of seeds to members.

Table 3: Frequency Distribution of HCAAP- related Problems encountered by the respondents

	<b>Frequency</b>	<b>Rank</b>
<b>Irrigation and Drainage</b>		
Dam 2 and 3 are not yet completed	134	1
No Lateral canals	118	2
Left main canal was not constructed	67	3
<b>Multiple Responses</b>	<sup>n</sup> = <b>323</b>	
<b>Rural Infrastructure Improvement</b>		
There was water system at the start but was not sustained	228	1
Could not use ferry landing rack as it is located not in their barangay	162	2
Farm-to-market road is partly unserviceable in rainy season	153	3
No farm-to-market road is constructed from their barangay	147	4
Water system was not implemented	52	5
<b>Multiple Responses</b>	<sup>n</sup> = <b>742</b>	
<b>Agricultural Support Services</b>		
They are not aware of any Research Center	257	1
They were not recipient of any extension activities and training	172	2
<b>Multiple Responses</b>	<sup>n</sup> = <b>429</b>	
<b>Schistosomiasis Control</b>		
They did not see any footbridge in their barangay	174	1
Communal toilets are already destroyed	165	2
They had not seen snail control Being implemented	137	3

No public and communal toilets were put up	115	4
They had seen only once a snail control being implemented	63	5
<b>Multiple Responses</b>	<sup>n</sup> = <b>654</b>	
<b>Institutional Development</b>		
They are not aware of any capability building activities of NGOs and LGUs	206	1
Members of irrigators association rarely meet	117	2
Irrigators association is not functional	109	3
<b>Multiple Responses</b>	<sup>n</sup> = <b>432</b>	

#### 4. Conclusions

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

A greater portion of the populace in the Municipalities of Las Navas and Catubig are from the agricultural sector who need the government's support at least with the basic necessities in farming.

The HCAAP purportedly was intended for rural development especially to the farmers who are the leading food producer in an agricultural economy. Nevertheless, this project has to be completely implemented for the beneficiaries to benefit of its services and facilities.

Irrigation system and farm-to-market roads have been accessible and available to many but are more advantageous to a few landed families and businessmen. Irrigation system does not significantly helpful to the respondent-beneficiaries as it is only beneficial to those land owners and nor with a mere farmer. The latter as a consequence are not conscious with the role of irrigation as major constraint to high yield and productivity.

With the completion of the farm-to-market road, land conversion resulted from their agricultural land for business and residential sites. As a result, warehouses and residential structures became the scene in the area inconsistent with the purpose of farm-to-market roads providing access of farm products to market.

Water system for the HCAAP covered barangays have not been sustained due to problems relating to operation and maintenance. On the non-implementation or poorly implemented water system depends the health of the rural people as they most likely are exposed to diseases for using contaminated wells and unclean sources.

Most of the respondent-beneficiaries are not aware of the function of a Research Center, hence, they have no knowledge about sustainable technologies, diversified cropping system and resource management. In these sense, the growth in this agricultural sector is still largely reliant on the traditional farming technology and inputs. Moreover, the absence of credit facilities adds to the issue on productivity as without capital the respondent-beneficiaries will tend to mobilize farming activities in a lesser area and be satisfied to a proportionate harvest.

Scistosomiasis control component is taxed by the shortage of health facilities. The persistence of this endemic disease will impossibly be eradicated and again create mess in the rural areas, especially the most backward places, where it has the most difficulty in accessing and affording essential health services.

Finally, the stagnant socio-economic situation and level of living in the rural areas are attributable to the lack of land owned by the respondent-beneficiaries. Irrigation system is less beneficial to a landless respondent-beneficiaries against the land owner who received most gains from the farm products. Hence, rural development projects are useless and no socio-economic impact on the lives of the farmers if they will not have a land of their own.

## 5. Recommendations

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

- 1) The NIA should push the completion of the Bulao and Hagbay Dams, left main canal, and lateral canals to irrigate the larger remaining service areas.
- 2) The DOH should provide communal toilets that are concrete permanent to avoid wastage of money and time.
- 3) The DA should establish linkage with financial institutions to help the capitalization needs of the farmers.
- 4) The LGU should always be a part of sustaining the water system despite its turn-over to the Barangay Water, Health, and Sanitation association (BAHWASA).
- 5) The government should now implement a genuine agrarian reform.
- 6) This study focuses only on the socio-economic impact of the HCAAP. It did not engage on how the HCAAP's budget was utilized, hence, the need for further study.

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