

# **Attitudes and Influences relevant to Golden Rice's potential use in the Philippines**

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## **Notes:**

Barangay = the smallest unit of government organisation in the Philippines

BFAD = Bureau of Food and Drugs. Philippines equivalent of US FDA, but includes food approval.

BHW = Barangay Health Worker

BNS = Barangay Nutrition Scholar

CAO = City Agricultural Office

(‘CAO Technicians are front line for Government coordination with farmers, but the CAO technicians find it difficult to delineate themselves from the Department of Agriculture advisors’)

DA = Department of Agriculture

DOH = Department of Health

DSWD = Department of Social Welfare & Development

Kuhol = snail

LGU = Local Government Unit

‘Melamine’ is a plastic. Around the time of this research fraudsters in China had been found guilty of adulterating ground rice, used for example in baby food, with powdered melamine

NFA = (National Food Authority) Philippine government stockpiled rice, provided at subsidised price to assist food security (which, it is reputed, has often been improperly stored)

Patak Pinoy = literally ‘Philippine Drops’: Philippine government endorsed vitamin A distribution programme, designed to combat VAD.

RHU = Regional Health Unit

‘Salmon’ = (used) tin of salmon used to measure volume of rice. 1 Salmon = 1Kg uncooked rice

‘Viand’ = any component of a meal which is not rice. (In the Philippines any food consumed without rice, is not considered a meal.)

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***This project initiated in 2008, and this page prepared March 31 2020, by Adrian Dubock.***

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# Results of the Rural Focus Group Discussions on Golden Rice



## AIM GOLDEN RICE TEAM

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## **Executive Summary**

The aim of the study is to identify the main attitudes and perceptions on rice in general, diet, nutrition, and on Golden Rice. The focus group discussion technique was used in the study to generate insights. Four provinces were chosen throughout the whole country where rice farming plays a major part in their economy: Albay, Iloilo, Leyte– Samar, and Bukidnon. Nine local communities for the four different provinces were chosen to participate in the study. Among these, three communities were chosen to represent each of three different types of people: subsistence farmers (less than one hectare of tilled land, usually non-irrigated), commercial farmers (greater than 1 hectare of tilled land, usually irrigated), and members of non-farming households (no involvement with rice farming). Within these communities, 8 to 12 respondents, half being male and the other half being female were chosen by the local coordinator to participate in the focus group discussion. A general questionnaire was used for each focus group discussion across the different provinces.\* Rice farming is regarded as highly important in these areas, as this is the main source of livelihood. However, it is financials that dictate as to what type of rice to plant and eat. In these areas, there is high trust with local government agencies in terms of agricultural and health concerns. However, these rural participants are vaguely aware on proper diet and nutrition. In these areas, financials are the main constraint, and this serves as the main factor that influences the purchasing power of these people. In terms of information sources, any method that involves high interaction and involvement is highly acceptable and reliable to the respondents.

Generally, results showed high acceptability for Golden Rice, despite its difference in color and its nature of being a genetically modified organism. This, however, is contributed by low knowledge on several key issues such as those pertaining to genetically modified organisms, vitamin A deficiency, and proper nutrition. The knowledge of its vitamin A content, however, did help in its acceptance. The study suggests that certain measures should be taken before releasing Golden Rice to the public, so as to direct the proper perceptions and attitudes to this new type of rice.

\* A 'story board' was used in each focussed group discussion, as a visual reminder to participants of the current subject area of the questionnaire. The story board used can be seen after the written report, in this pdf file. (ACD 30.3.20)

## Objectives

The aim of the study is to identify the main attitudes, usage, and perceptions on rice in general, diet, nutrition, and specifically on Golden Rice. The focus group discussions aim to understand the participants' views on rice farming, how important is rice in their households, and what crops and/or rice varieties they prefer to plant and consume. Insights from discussions on rice farming, rice/food choices, knowledge and attitudes on diet and nutrition, information sources, Vitamin A deficiency and Golden Rice will be used in as part of the Golden Rice market positioning and communication.

## Milestones

The general events that transpired in the duration of the study were as follows:

- March 21–22, Social Marketing Workshop with JP Jeannet, Asian Institute of Management, Makati
- March 28–29, Questionnaire development and practice focus group discussions, IRRI, Los Baños
- April 28–May 1, Practice focus group discussions, PhilRice, Muñoz, Nueva Ecija
- May 11–17, Local Coordination with participating communities
- May 18–24, Actual FGD Period
- May 25–26, Result Compiling
- May 27, Validation of Results in with representative local communities
- May 28–31, Group Meetings and Initial Provincial Report Writing, Cebu
- June 1–4, Final Preparations, Asian Institute of Management, Makati

For the focus group discussions, the schedules for each province were as follows:

### Albay Province

Local Community	Date	Time
Lomacao, Guinobatan	May 14, 2009	9:00 AM (Trial FGD)
Dikeside, Guinobatan	May 14, 2009	5:00 PM

Barayong, Ligao	May 15, 2009	9:00 AM
Ilawod, Camalig	May 15, 2009	1:00 PM
Herera, Ligao	May 16, 2009	1:00 PM
Alnai, Polangui	May 17, 2009	1:00 PM
Kinale, Polangui	May 18, 2009	8:00 AM
Minto, Guinobatan	May 18, 2009	1:00 PM
Saban, Oas	May 19, 2009	2:00 PM
Travesia, Guinobatan	May 20, 2009	9:00 AM
Libod, Camalig	May 20, 2009	1:00 PM
Paulog, Ligao	May 20, 2009	4:00 PM

### **Iloilo Province**

<b>Local Community</b>	<b>Date</b>	<b>Time</b>
Banban Pequino, Calinog	May 18, 2009	9:00 AM
Banban Grande, Calinog	May 18, 2009	1:00 PM
Jamin-ay, Calinog	May 20, 2009	9:00 AM
Dalid, Calinog	May 20, 2009	1:00 PM
Lonoy, Calinog	May 21, 2009	9:00 AM
Barangay Calinog, Calinog	May 21, 2009	1:00 PM
Cabagiao, Calinog	May 22, 2009	9:00 AM
Cabagiao, Calinog	May 22, 2009	1:00 PM
Lampaya, Calinog	May 23, 2009	9:00 AM

Guiso, Calinog	May 23, 2009	1:00 PM
Dalid, Calinog	May 25, 2009	9:00 AM
Poblacion (Municipal Hall), Calinog	May 25, 2009	1:00 PM

### **Leyte–Samar Province**

<b>Local Community</b>	<b>Date</b>	<b>Time</b>
San Agustin, Babatngon, Leyte	May 15, 2009	9:00 AM (Trial FGD)
Magsaysay, Alangalang, Leyte	May 18, 2009	9:00 AM
District III, Babatngon, Leyte	May 18, 2009	1:00 PM
Pagsulhugon, Babatngon, Leyte	May 19, 2009	9:00 AM
Rizal II, Babatngon, Leyte	May 19, 2009	1:00 PM
Sawa, Basey, Samar	May 20, 2009	9:00 AM
Buenavista, Basey, Samar	May 20, 2009	1:00 PM
Libertad, Palo, Leyte	May 21, 2009	9:00 AM
Cangumbang, Palo. Leyte	May 21, 2009	1:00 PM
P. Barrantes, Alangalang, Leyte	May 22, 2009	9:00 AM

## **Bukidnon Province**

<b>Local Community</b>	<b>Date</b>	<b>Time</b>
Managok, Malaybalay	May 14, 2009	9:00 AM (Trial FGD)
Apo Macote, Malaybalay	May 18, 2009	9:00 AM
Santo Niño, Malaybalay	May 18, 2009	1:00 PM
Sinanglanan, Malaybalay	May 19, 2009	9:00 AM
San Martin, Malaybalay	May 19, 2009	1:00 PM
Linabo, Malaybalay	May 20, 2009	9:00 AM
Violeta, Malaybalay	May 20, 2009	1:00 PM
Casisang, Malaybalay	May 21, 2009	9:00 AM
Barangay 9, Malaybalay	May 21, 2009	1:00 PM
Barangay 1, Malaybalay	May 22, 2009	9:00 AM

## **General Methodology**

The focus group discussion technique was used in the study, and four provinces across the country were chosen as sites: Albay, Iloilo, Leyte–Samar, and Bukidnon. These provinces were chosen because rice farming plays a crucial role in the livelihood of its residents. A general questionnaire was developed by members of the Golden Rice Project of IRRI, with the assistance of the facilitators from the Asian Institute of Management. This questionnaire was then tested and revised, and local versions of the questionnaire were developed to suit the different provinces (the questionnaire was translated to the following local dialects: Tagalog, Bicolano, Hiligaynon, and Waray). A trial focus group discussion was done to test and validate the local translation of the questionnaire.

The general process involved the selection of at least 9 local communities per province. Among these, three communities were chosen to represent 3 different types of people: subsistence farmers (less than one hectare of tilled land, usually non-irrigated), commercial farmers (greater than 1 hectare of tilled land, usually irrigated), and members of non-farming households (no involvement with rice farming). Within these

communities, 8 to 12 respondents, half being male and the other half being female were



chosen by the local coordinator to participate in the focus group discussion. A series of guide questions were asked based on the type of participants and answers were discussed as based on the topic at hand. After conducting the 9 focus group discussions, teams returned to at least 2 groups to validate the common findings.

The entry to each province was through the Department of Agriculture, which was assisted by the local coordinators. Courtesy calls to governing officials in the municipalities were done. The Department of Agriculture, with the help of the local coordinator, identified and chose the different communities that would participate in the discussion, based on its general profile. Participants were also identified and contacted by the Department.

During the actual discussions, a recorder is assigned to take down key answers, insights, and reactions of the participants after each question. The discussions were recorded and translated to English by local translators. After each focus group discussion, the profiles of the participants were recorded.

### **Modifications to the General Methodology**

Facilitators for each province modified the planned methodology of the study in order to adapt to the situations experienced by the local communities.

For the Albay province, there were local communities that did not have a list of their residents. Local contacts in the communities were asked to choose the participants with the requirement of the team. Another problem was the schedule; the team adjusted the schedule of several focus group discussions due to different town fiestas which were scheduled to take place on the required dates. They had their first discussion on the 14th of May, instead of the required 17th of May. In terms of the number of participants, they identified more than 12 people (6 males and 6 females) in each community causing them to have more than 12 participants in several focus group discussions. This shows how difficult it is to inform certain participants not to join in the said discussion, as they may be interested. Also, no courtesy calls with the local government was done.

For the Iloilo province, several modifications were made. Only one town in the province was selected due to lack of time in coordinating with other towns (courtesy calls were scheduled and most did not fit within the allotted time table); however, the town selected was located at the border of three provinces, namely Iloilo, Antique, and Capiz. Some local communities chosen were located at the border. No trial focus group discussion was done to validate the questionnaire because of the lack of time (Tuesday was considered as market day, which made the local participants unavailable for discussion). Because one major problem in the area is irrigation (with most towns not possessing any: from Calinog to Cabatuan), most of the fields required rainfall. This made it difficult to differentiate the subsistence and commercial farming participants, as

the majority did not have any irrigation. Because of this problem, both groups were merged, and 9 out of 12 focus group discussions were solely devoted to these two groups, to make up for the distinction. Because of the additional 3 focus group discussions, the last was conducted later, on the 25th of May. Also, certificates were distributed to all the participants of the focus group discussions to entice them to join and participate actively in the discussion.

In the Leyte–Samar province, the recorder duty was temporarily assigned to the local coordinator, as the recording facilitator did not understand the local dialect. Also, no courtesy calls were done on the municipal level; facilitators contacted directly to the local communities, bypassing the local government.

In the Bukidnon province, only one city was chosen, mainly due to security reasons. The profile of subsistence farming households was reclassified into labor-based farming, or farmers that work in fields not owned by them. The payment of these farmer- labourers is usually paid in sacks of rice. The surrounding area is known for rebel group residents, and therefore security measures were taken in the province by selecting communities within 1 to 1.5-hour proximity from the city. In addition, the local dialect was not used in the discussions by the team because they were not familiar with it. The local coordinator assumed the translator's role since approximately 50% of the respondents answered in the local dialect (*Bisaya*).

## **Provincial Profiles**

### **Albay Province**

Albay province is naturally endowed with resources including mineral deposits, volcanoes, geothermal sites, mountain ranges, coastal terrain, marble deposits and aggregates. Natural ecological destination abounds, although it does not have a virgin forest or sufficient ecological cover as buffer for climate change aberrations. It sits on the typhoon belt and on the ring of fire making it prone to natural disasters and resource exploration.

The provincial geographical commodity map is primarily agricultural at 87% (2,212.8 km<sup>2</sup>) and 13% remain protected lands. The 87% agricultural area is in 1:1:1 ratio of suitably used: under used agricultural land utilization. Palay is the major temporary crop and coconut the major crop of Bicol region, hence also of Albay province. The former is vulnerable to strong typhoons. Twelve of the 18 LGUs of the province are coastal communities with significant fisheries dependent families. Thus, majority of the Albayanos depend on agriculture-fisheries livelihood. Food security for the province is regularly threatened and affected by erratic climate change.

Based on the August 2007 census, Albay has a total population of 1,190,823, which makes it the 22nd most populous province in the country. There are 208,640 households in the province with an average size of 5.22 persons, significantly higher than the national average of 4.99.

There 478 barangays are coastal or mountainous and some are remote from the municipal seat of government. This terrain profile has direct implications on access by beneficiaries to health and nutrition services and implications on the scope of coverage, frequency of visits/health and nutrition status monitoring of beneficiaries by volunteer health and nutrition workers.

Dependency index for the province is approximately high with average family size of 5. Poverty threshold income is pegged at P14,969 in 2006 and P15,407 in 2007 yearly.

The province of Albay has high prevalence of malnutrition (20%) or with nutritional deficiency among the children of 0–71 months old compared with the national average of 24% in 2006 it is still considered a nutritionally at-risk province.

The most important forms of malnutrition in the province are protein-energy malnutrition, nutritional anemia, Vitamin A deficiency and Iodine Deficiency Disorders. Protein-energy malnutrition is the most prevalent and is manifested as growth failure associated with recurrent infection in the low-income preschool children. Vitamin A is also prevalent because rice is the staple food of the Albayanos and is almost always found in association with high-energy malnutrition. Nutritional anemia is likewise a problem to some extent pregnant women and toddlers are the main groups affected. While surveys tend to reveal that lactating women are less affected than pregnant women, the ill-effects of anemia on both the mother and the child are among the pressing problem to be discussed.

The following are the towns Covered in the focus group discussions:

- **Oas, Albay**

The town's economy is generally agriculture-based. Its major products include rice, root crops such as sweet potato and *gabi* (taro), coconuts, and other fruits and vegetables.

Fish and other shell foods are also harvested in its coastal areas but do not contribute much to the municipality's income. Underutilization of the town's marine products is due to limited access and transportation to its coastal areas. Farm-to-market roads are currently being constructed to alleviate this situation.

- **Polangui, Albay**

Polangui is a 1st class municipality in the province of Albay, Philippines. According to the 2007 census, it has a population of 77,122 people in 13,773 households.

The town then consisted of five hundred people. Its location was a low-lying area that was prone to floods. The people later moved to the town's current location; an elevated area less exposed to flood. The town derived its current name from *oyangi*, a type of tree that was abundant in the area.

- **Camalig, Albay**

Camalig is a 3rd class municipality in the province of Albay, Philippines. According to the 2000 census, it has a population of 58,141 people in 11,275 households. Pinangat is one of Bicol's trademark food other than the pili nut and its various incarnations and Bicol express, to name a few. Made from gabi leaves mixed with gata (coconut extract). Camalig in Albay is known for this delectable dish. It comes in hot and not so hot versions.

- **Guinobatan, Albay**

Guinobatan is a 1st class municipality in the province of Albay, Philippines. It is the birthplace of Gen. Simeón Ola, the last Filipino general to surrender to the Americans after the Philippine-American War.

Parts of Guinobatan were hit hard by the mudslides from Mayon Volcano caused by Typhoon Reming, particularly Barangay Maipon.

According to the 2007 census, it has a population of 74,386 people in 14,154 households.

- **Ligao City, Albay**

Ligao is one of the fourth-class cities in Albay. According to 2007 census, it has population of 101,179 people in 17,031 households. Last March 24, 2001, by Republic Act 9008 it was declared as a city.

The following are the profiles of the respondents of the focus group discussions:

- **Subsistence Farmers**

Among the FGD respondents in Albay, farming showed up as the number one source of income. Since farming does not consume much time after land preparation, planting and harvesting, most farmers find other sources of income. For subsistence farmers, several are involved in agri-business. They either have small piggeries, poultry or small farm lots where they can have an alternative source of income. For females, they try to help their husbands earn extra income by being involved in handicraft making.

Some other females want to make use of their idle time and open up small mom-and-pop stores (sari-sari stores) in their neighborhood.

Our respondents have an average age of 53 for males and 56 for females, and their households usually consist of 6 members in the family. Children below 12 averaged around 1 for each household and 2.5 for those who have children above 12.

The average farm size was around 0.8 hectares for the 5 areas covered. Most of the land is irrigated because of the several rivers Mayon volcano has created, except for one community that had a budget problem for quite some time. Water is not a problem in most areas because of its continuous flow even during the summer months. For an irrigated water source area, it is unusual to see Albay as having only 2 cropping seasons a year. Normally, irrigated land has an average of 3 cropping seasons, but Albay is one of the rainiest areas in the Philippines and this is the reason cropping seasons has been reduced to 2. Aside from rice, farmers also plant other vegetables like squash, patchay, string beans, bitter melon and chili. These are some of the vegetables that are not meticulous with water content of the soil. Root crops like cassava, sweet potato and yam are planted because of the soil's consistency. The soil is sandy, and these are the crops that mostly grow in sandy soil. Coconut is also a source of income because not much is needed to maintain these plants and they just grow around their farms.

- **Commercial Farmers**

For commercial farmers, aside from rice farming as their primary source of income, these farmers are also involved in agribusiness. Some of which mentioned include piggyeries, fish ponds and poultry. These are alternative sources for them because these do not consume much time, just like rice farming. The wives on the other hand try to involve themselves in mom and pop stores in their areas.

The male respondents had an average age of 53.5 years while female respondents had an average of 51.3 years. Their household size was around 5.3 persons per household. Children below 12 numbered around 1.17 per household while children 12 and above was averaged at 2.1.

The usual size of their farms is 1.82 hectares and all of which are irrigated. Same as subsistence farmers, they also have an average of 2 cropping seasons a year. Again, the reason for this is due to the weather conditions in the area, unlike most irrigated land where the usual cropping seasons is 3. Aside from rice, most of the farmers are also involved in vegetable farming. The common vegetable crops they plant include root crops, green leafy vegetables and squash. Some are also involved in coconut, which is a popular product in this region.

- **Non-Farming Households**

Most of the non-farming households are involved in construction or work as laborers in different fields. A few work as drivers, either for commercial passenger vehicles or work as private drivers. These are their only major source of income. Majority of the females do not work and provided their occupation as homemakers.

Out of the 3 focus group discussions specific for non-farming households, we got the same number of men and women. The average age of men was 47 and for females, 40. Their family size or the size of each household is 5.33 for all three areas. There were more children below 12 than those above 12, but the difference is very minimal. The number of children below 12 was around 1.73 and those 12 and above was 1.2.

### **Iloilo Province**

Iloilo is the largest province on Panay, measuring 4,767 km<sup>2</sup>, and occupies the fertile alluvial plains of the southeast. High mountains bound this province from the provinces of Antique to the west and Capiz to the north. There are many small islands that lie along its irregular coast along the Guimaras Strait. There are two pronounced seasons, wet from July to November and dry from December to June. The province is divided into two distinct geographic regions: the highlands of the Madia-as on the western border and the lowland plains which account for a larger portion of the province. Iloilo is subdivided into 42 municipalities, 1 component city, and 1 highly urbanized city. There are 1,901 barangays in the province. The population is about 1.9 million people, with 813,000 being part of the labor force.

Rice is the main crop in the province. There are about 282,000 hectares of irrigated and 116,000 hectares of rain-fed fields that produce about 1.25 million metric tons of rice annually. More than 220,000 farmers in the province make a living out of this industry. Other agricultural crops of the province include legumes, root crops, and fruits like mangoes, pineapple, and citrus fruits. Aside from agriculture, another strong industry of the province is in fisheries and aquatic farming.

In Iloilo, a town in the border of Iloilo, Capiz, and Antique was chosen, as this has very little influence from large organizations such as the International Rice Research Institute, which is also present in the province.

- **Calinog**

The town of Calinog nestles in the central part of Panay Island. It is the last municipality in the central part of Iloilo Province which adjoins the provinces of Antique and Capiz. It is bound on the north by the Municipality of Tapaz, Capiz; on the northeast by the Municipality of San Remigio, Antique; on the south by the Municipality of Lambunao; on the southeast by the Municipality of Dueñas and on the southwest by the Municipality of Valderrama,

Antique. It is located at geographical coordinates 11°15' latitude and 122°30' longitude.

Calinog falls under the third type consisting of seasons, which are not very pronounced relatively dry from November to April and wet during the rest of the year. The maximum rain periods are not very pronounced with a short dry season lasting only from one to three months. It is influenced by the southeast monsoons, which is one of the principal air streams affecting the local topography.

Around 75% of the municipality's slope is above 8% or category C. the municipality, however, is mainly agricultural. There are four (4) types of soil in Calinog: 1) Umingan fine sandy loam; 2) Alimodian clay loam; 3) Bantog clay loam and 4) Alimodian soil (undifferentiated).

Jalaur River is the main source of water supply most especially for irrigation purposes considering the fact that this river is one of the biggest in terms of source volume in the whole Panay Island. For Potable Water, there is one pumping station at Barangay Barrio Calinog as its main source and one back-up pumping station at Barangay Simsiman along the Jalaur River.

Administratively, Calinog was re-classified as a second-class municipality and is fast growing in terms of population. There are 59 barangays with a total of 48,454 as of May 1, 2000. There are 8,559 family households with an average size of 6 persons in a family. Twenty-four thousand six hundred and fourteen (24,614) of the total population belongs to the male group while 23,840 are female.

About 10.81% of the population are 4 years and below (pre-school). The school population (5–9) composes 37%. The effective working population group (15–64 years) totals 25,130 (55.30%) while the senior citizens (64) years and above totals 2,184 or 4.80%.

The 1990 population of 41,113 increased to 48,454 in a period of only 10 years. This could be attributed to a very high fertility rate and rapid immigration

Agricultural programs include promotion of organic farming, launching of Vermicomposting, natural farming system, municipal seed farm, and distribution of assorted vegetable seeds. Also, Department of Agriculture has facilitated the distribution of certified seeds, fertilizer under typhoon Frank rehab, vegetable seeds, and fertilizer of discount coupon.

At present, there is no irrigation facility that is functional/operational within the municipality and throughout neighboring towns.

The following are the profiles of the respondents of the focus group discussions:

- **Subsistence and Commercial Farmers**

Because of the lack of proper irrigation, both subsistence and commercial farmers were classified together, as they experience the similar conditions. The farmer respondents are composed of 53 females and 45 males, with an average age of 53 and 51, respectively. The educational attainments of the respondents are as follows: 30 have college education, 37 high school education, and 30 elementary. The average members per household is 5, with the average number of children below 12 years old is 1, while the average number of children above 12 years old is 3. The farmers have an average of 2 croppings per year, mainly because of the absence of a stable source of water or irrigation. The average size of the rice farm is about 1.6 hectares, 4 of which have shared land tenure, 52 leased, and 32 owned. Other non-rice crops planted in the area are vegetables, corn, banana, *monggo* and string beans, and bamboo, which is mostly being planted for consumption in the household. The top 3 other sources of income are livestock raising (20), *barangay* official work (11), and labourer work (8). However, the major source of income is still rice farming.

- **Non-farming Households**

The average age of the female respondents is 44, while the average age for the male respondents is 43. Most of the participants have had college education (16), while the rest have had high school (10) and elementary (6) education. The average number of members per household is 6, with the average number of 1 child below 12 years old and 2 above 12 years old. The top 3 sources of income are carpentry, transportation work, and vegetables gardening. Aside from this, the top 3 other sources of income are local government work, local transportation work (pedicab driver), and laundry services.

### **Leyte–Samar Province**

Leyte and Samar (formerly Western Samar) are two of the provinces in Region 8 or Eastern Visayas. The San Juanico Bridge connects the two provinces. Almost all of the towns in the area plant rice – whether for commercial purposes or subsistence (small farming). The level of operation depends on the presence of irrigation systems and the type of land (hilly or flat).

Flat lands near the coast and mountains in the interior characterize the topography of Eastern Visayas. The ten communities selected for the study were located along and near the coastlines.

The terrain of Leyte, with its flat lands and river systems, is conducive for paddies and coconut plantations. The river systems that crisscross some of the towns serve as valuable irrigation sources. According to the National Irrigation Administration (NIA), 65% of the area has been given sufficient irrigation as of 2002. On the other hand, 84% of Samar's arable



lands lacks irrigation systems. The province also has a much more diverse environment. With lots of undeveloped mountains, forests, rivers, lakes, and plains compared to Leyte. The road system is likewise not developed in some areas.

Statistics from National Economic and Development Authority in Region 8 reveals Eastern Visayas has only about 800 barangay health stations but 4,390 barangays. Health workers in the community level totals to 16,806. The ratio of government doctor to population is at 1:647,155 and hospital bed to population at 1:1,345. All the figures are for year 2002.

A total of four towns were chosen for the study: Alangalang, Palo, Babatngon, and Basey. The first three is in Leyte while the last one is in Samar.

- **Alangalang**

Alangalang is a landlocked town. It is primarily a land-based agricultural economy, with lots of rice paddies and coconut plantations. Alangalang is blessed with vast areas of flat lands and is one of the major producers of rice in the region. Two communities, barangays Magsayasay and P. Barrantes, were identified as commercial rice farming groups.

- **Palo**

Palo is nearest to the capital city of Tacloban. This proximity affects the development of its agricultural lands with some sections being transformed to residential and industrial areas. However, Palo still produces palay, aided by numerous rivers for its irrigation. Small farmers were taken from barangay Libertad and a group of non-farmers came from barangay Cangumbang.

- **Babatngon**

Babatngon is located along the north coast of Leyte island. A big part of its economy is centered on fishing and related industries. The flat lands though are still used for rice farming. Three different groups were chosen from three different communities; from barangay Pagsulhugon came the commercial rice farmers, barangay District III were the small farmers, and barangay Rizal II were the non-farmers.

- **Basey**

Basey is located in Samar. With its hilly topography and undeveloped irrigation, the area is not entirely suitable for rice farming. The flat lands are few and separated by natural barriers such as hills and swamps. However, communities still cultivate rice including some upland varieties. Most of these are for the farmers' own consumption. Two groups were chosen, small farming group from barangay Sawa and non-farmers in barangay Buenavista.

There were three focus group discussions conducted for each category; commercial rice farmers, subsistence rice farmers, and non-farmers. A conscious attempt was made to balance the number of men and women respondents in every focus group discussion.

- **Subsistence Farmers**

There were twenty-six (26) respondents identified as subsistence farmers, consisting of eighteen (12) males and twenty (14) females. Average age of the men is forty-six (46) years and the women forty-nine (49). The mean size of the households is seven, the children numbering at five on average, and mostly only one remains below the age of twelve years old.

A large number of them are tenants (eighteen out of twenty-six) with farmlands having an average area of almost 2 hectares. Majority of the lots remain non-irrigated. All of the farmers plant rice two times annually. Other crops grown by the respondents are banana, taro, sweet potato, and coconut.

The respondents engage in copra selling and animal husbandry to complement their earnings from rice farms. Other sources of income for the family also include mat weaving and sari-sari or neighborhood stores.

- **Commercial Farmers**

Twenty-eight (28) respondents attended the discussions with an equal number of men and women. Forty-nine (49) is the mean age of the men, while forty-seven (47) for the women. On average, the households are composed of six members, with four children in total. Most of the families have only one child below the age of twelve.

Only six of the respondents own their farmlands while the rest either lease the farms or act as tenants. Most of these lots are less than 1.5 hectares in size and are non- irrigated. Except for one who plants rice three times a year, all of them follow the “norm” of two rice-cropping in a year.

Non-rice crops in their communities include sweet potato, banana, cassava, water melon, and eggplant. Aside from farming, respondents also engage in pasuhol or act as farm-hands and animal husbandry as a source of additional income for the family. Some have pedicabs (bicycles with side-cars) to supplement earnings during non-planting and harvesting time.

- **Non-farming Households**

The non-farming group consists of twenty-seven (27) respondents, with fourteen (14) men with a mean age of 34 years and thirteen (13) women with a mean age of 53. Six is the average size of the households. It is usually composed of six members, with one child below twelve years old, from a total of four children.

The father usually works in driving, carpentry, and copra selling; while some are technicians, laborers in construction sites and barangay officials. Most of the mothers do not have jobs, although some are engaged in mat weaving and embroidery still others

are barangay officials and receive honorariums. Other sources of income for the family include selling tuba (coconut wine), fishing, and dress making.

### **Bukidnon Province**

Bukidnon province in Mindanao Island is a landlocked area surrounded by Misamis Oriental province in the North, Agusan del Sur and Davao provinces in the East, Cotabato province in the South and Lanao del Norte and Sur in the West. It is part of the Northern Mindanao Region, and it has an estimated population of 1,081,902, of which 556,000 are in the labor force. Based on age distribution, Bukidnon has a fairly young population, with ages 14 and below accounting 42.15% or 446,952. The 15–34 age bracket account for 33.68% of the province's population or 357,112. Ages 55 and above barely accounts 6.5% of the total. The average population growth rate of the province is 2.41% from 1995–2000. Male-to-female ratio in the province stood at 1.06. There are 464 barangays throughout the province. The major agricultural product of the province is pineapple, followed by rice, sugarcane, corn, and banana.

The province's total land area is 8,293.78 km<sup>2</sup>. Bukidnon is generally characterized as an extensive plateau but the southern and eastern boundaries are mountainous area. The province's average elevation is 915 m above sea level. The whole eastern and southern border adjoining the provinces of Agusan, Davao, and Cotabato are covered by lofty and densely forested mountains of the Pantaron Mountain Range (Central Cordillera).

About 49% of the land resource of the province is of rugged hills and mountains and 33% of undulating to rolling terrain. The rest of the province is composed of nearly level terraces, alluvial lowland, canyons and gorges.

Two types of climate prevail between the northern and southern sections of Bukidnon, the northern part has no pronounced rain period but is relatively dry during the months of November to May. In the southern portion of the province, the climate is classified to have no dry season. The climate is relatively cool and humid throughout the year. The average annual rainfall is 2,800 mm. Just like in other parts of the country, rainfall is more pronounced from June to October compared to other months of the year. The drier season is from February to April.

In the province, Malaybalay was chosen as the location of the study.

- **Malaybalay**

Malaybalay City, the capital city of Bukidnon is located in the central part of the province and contains 46 barangays. The whole eastern and southeastern border adjoining Agusan del Sur and Davao del Norte is elevated and densely forested mountains, which is one of the few remaining forest blocks of Mindanao. The city is landlocked, and the nearest sea and air ports are in Cagayan de Oro City, which is 91 kilometers away. The total land area of the

city is approximately 984.38 km<sup>2</sup>. An estimated of 65% of this is classified as forestland/timberland and the remaining 35% are lands which could be used for various purposes such as for agriculture or for industry. The average elevation of the city is 622 m above sea level. The city is predominantly rural, with only 16% of the population in urban areas, 40% in urbanizing barangays, and 46% in rural areas.

The following are the profiles of the respondents of the focus group discussions:

### **Subsistence Farmers**

The average age of male participants is 51.7 years, while for female, the average age is 49.1. There are about 5.2 members per household, with an average number of 2.3 children. Of these, there are, on average, 1.1 children below the age of 12. The main source of income for these people is from their work as farm laborers. They work in farmland with an average size of 1.26 hectares. Eighty percent of these farmlands are irrigated, causing an average cropping cycle of 2.2 a year. Aside from rice farming, they earn through livestock farming, and in other service-oriented jobs such as dressmaking and haircutting. Some also work as barangay workers. Other crops in the area include fruits, vegetables, and corn.

### **Commercial Farmers**

The average ages for both male and female participants are 43.6 and 45.1 years, respectively. The average number of members in a household is 5.1, which contains on average 2.2 children. However, there is only 1 child that is less than 12 years old. These farmers farm on average 2.64 hectares, of which 95% is irrigated. This causes an average cropping cycle of 2.5 per year. Most of the farmers in this classification are land owners. Aside from farming, other services such as carpentry, dressmaking, tricycle driving, and teaching serve as other sources of income. Also, they earn through self-owned mom and pop (*sari-sari*) stores. Other crops in the area include fruits, vegetables, corn, and trees.

### **Non-farming Households**

The average ages for both male and female participants are 44 and 41 years, respectively. In the groups, there were 4 participants that were pregnant. The average number of members in a household is 5.4, which contains on average 1.5 children. However, there is less than 1 child in each household that is less than 12 years old. Most work as barangay workers and vendors, while most are without jobs. Others engage in other businesses such as rentals, mom and pop (*sari-sari*) stores, fish vending, vulcanizing, and children support.

### **Major Findings**

#### **On Farming**

Concerning the reasons for planting rice, all four provinces that have been sampled showed

several commonalities under different criteria, but differences featured in each local community were also discussed, which proved to be helpful for this research. One common thing for the provinces regarding the profession of farming is that they plant rice as a source of income. Farming is where they get money to pay for their basic needs. This includes utility bills, food (other than rice), and housing. One of the most important reasons why they farm is to fund the education of their children. They are hoping their children will have a brighter future and not end up as farmers, and education is one of the most important items they spend on. Partly, they plant rice for their own consumption. They are able to save on rice and redirect some of their earnings to other needs. Farming has been a profession in their family and most of the farmers do not know any other job other than farming. They say this is their only choice and they have to make use of what they know. Aside from these reasons, most of the respondents also use the revenues from farming to pay for debt. This debt was incurred and used up as capital for their farming needs.

For Albay and Leyte, some of the respondents mentioned that they are involved in rice farming so as to provide cheaper rice to their neighbors and to help the community in this manner. Due to the recent rice shortage, this is their way of providing public service to those that are in need.

Most of the farmers prefer to keep their good seeds or exchange good seeds from their neighbors. They reasoned that these good seeds are already proven, and the testimonials from others and their own experience count the most. This has proven to be effective in their type of soil and climate, which gives them a greater probability that this variety will produce a good yield for them.

In general, farmers are not particular with what variety to use in each season. This is due to the fact that they use the same plant 2 to 3 times before they change it to a new variety or use the same variety. They prefer varieties that can work well during the summer and rainy seasons.

The seeds used by the farmers presently are those seeds that were subsidized by the government and distributed by the Department of Agriculture. The Department of Agriculture bases its rice rationing to the farmers on several factors that will enable the farmers to achieve higher yield, one of which is the type of soil in the area.

Seed preference is mainly based on the type of soil and weather conditions of the area and on the availability of the seeds. Other common answers are those that harvest earlier, have good yield, have high resistance, and weigh heavier when sold. However, if the seeds would be distributed to them for free, they would be willing to try them. The following is a list of seeds commonly used in these areas:

- RC 82: Non irrigated (Albay, Bukidnon and Iloilo)
- RC10: Non irrigated (Albay, Bukidnon and Iloilo)
- RC18: Non irrigated (Leyte, Bukidnon and Albay)

- 128: (Albay and Bukidnon)
- 122 (Albay and Bukidnon)

On the other hand, the below provides is a list of varieties different from each province:

- Albay: 138, 72, 56, 134, 14, 144, 80, 128, 146, 144, 75 (both for wet and dry seasons)
- Iloilo: 134, 188, 110, 148, Red 36, RI64
- Bukidnon: 120, 140, M11 (dry), 7-tonner, 122, M69, Masipag (Rainy)
- Leyte: 42 and N3

When it comes to deciding what type of variety is to be used, a large majority mentioned that the male farmers make the decision. There are a few instances where the farm owner is a female or is a widow, which makes her responsible for the decision making.

There are instances where there is not enough supply of rice seeds subsidized to the farmers. What the Department of Agriculture does is they raffle off the seeds. Obviously, there are farmers who are not given seeds and they either have to buy commercially, use their own good seeds, or ask from others. This problem is common in Leyte and Albay. In Iloilo and Leyte, there is a common occurrence of late arrival of seeds to farmers. This also leads to delays in harvest especially during the rainy season, wherein they try to harvest as quickly as possible to avoid the rice from getting wet.

In Leyte, there is an issue that came out that Department of Agriculture employees hoard the stock of rice that should have been distributed. In Iloilo, there is almost the same problem but what happens is that the Department of Agriculture employees have preferences or prioritize those people they know rather than giving it randomly.

In Bukidnon, one local community mentioned they prefer IR-64 and 36 because these are varieties which performed well in the past. With the recent problems and new diseases in rice farming, these varieties are more prone to Tungro and other diseases. There were also a few cases where inbred seeds were preferred, but this only happened in areas where SEARICE was predominant.

Several farmers have shown interest in trying new variety of rice. They have accepted that there is new technology which can help them increase their earnings. They were even more inclined to try new varieties if the rice was given for free. Before they start to try a new variety, they would want to know if the yield of this new variety is better than what they previously had. They are also asking for demonstrations or actual results on how well this rice did. Pests have been a long-time problem for most farmers and are definitely a concern. They need to know if this new variety is more resistant to pests. Harvesting time for each variety may vary. There are some who want to know if it takes a shorter time to harvest

compared to what they currently have. Lastly, before they start planting, they would like to know if this new variety has a better price compared to what they plant now. Another question posted to the groups is if the rice variety is heavier and more sellable to the public. As long as they earn more than what they currently are making, they are willing to try these new varieties.

The common crops that four of the provinces mentioned include root crops like cassava, yam, and sweet potatoes. Several also planted vegetables. These are crops that are not particular with the type and condition of soil because rice fields are usually muddy and not all crops can withstand these conditions. Some of the farmers also plant corn, but only a few farmers in these areas do this regularly because corn needs a different condition compared to rice.

There were several other crops planted distinct for each area. Sugarcane in the Iloilo area is distinct to this part of the country. For Leyte and Albay, coconut is also widely planted because these are plants that just grow in their land or have been in their land for a long time. Coconut is a crop which requires less maintenance. For Albay and Iloilo, farmers also plant squash and banana. These are associated with their daily diet. A person in Albay also mentioned planting watermelon because it earns him more money than rice.

In all four towns, only people in Bukidnon have some knowledge of Bt Corn. The three other provinces do not have any idea as to what Bt Corn is. The people who have some knowledge of Bt Corn are associated with or were informed by agencies that have information regarding Bt Corn and genetically modified organisms. These organizations include Syngenta, SEARICE, IPAR, and Kaanib. They were informed that this type of corn is packed with chemicals, that this has built-in bacteria that protect it from corn borers and falling grains, that Bt corn causes long-term damage if eaten by humans, and it causes diarrhea. Some even mentioned that Bt Corn is used to ward-off thieves because when they know or see that this corn is planted, they get discouraged in stealing because of the information they know on Bt Corn. Farmers also mentioned that planting this variety is less expensive because it does not need chemicals for maintenance. The church is also against the use of Bt corn, as mentioned in Bukidnon.

For the information they get regarding farming, farmers get their information mostly from technicians from the Department of Agriculture. These are people that have provided them good and reliable information. This is the reason why they continue to rely on the technicians in their areas. Some also rely on the other farmers' experience for their information due to the actual results gathered.

For Albay and Iloilo, some farmers also get information from fertilizer and pesticide distributors like JARDIN and ALDIS because they teach them new techniques and provide new information to them. There are also other sources of information in Bukidnon, such as SEARICE and PDAP, which both are non-government organizations that provide farmers necessary information in organic farming. In Iloilo, Philrice has a text messaging program where they send farmers information through SMS.

Most of the farmers in Albay, Iloilo, and Bukidnon keep 20% to 50% of their harvest and sell the rest. This figure includes the good seeds saved for the next season. For Bukidnon, 10% to 30% is saved while the rest are sold.

### **On Rice and Food Choices**

Generally, the respondents consider in their choices of food those with nutritional value (vegetables), those that complete a balanced diet, and those that are available. For adults, they also prefer nutritious food to prevent them from illnesses (such as rheumatism, hypertension and diabetes) and to make their bodies strong and healthy. However, due to financial constraints, most of their preferred diet cannot be religiously followed. Also, generally, there is no differentiation with the food of elders and the food of the young, as all family members eat the same food prepared in a household. In Iloilo, when they run out of money, they only eat rice for their meals, as long as it is hot and it fills their stomachs. In some of the groups, the preferences of their children in terms of food choices are followed for as long as it is within their financial budget. In this case, parents give priority to their children in the intake of foods.

The amount of rice they cook for one day depends on the size of their household. For Albay and Leyte, a typical household of 5 consumes 1–2 kilograms per day. Usually, adults will eat what is left by their children. Men eat more than women, but children eat more than elderly. For Albay, men and teenagers consume more rice, with the reason that it is their source of energy in working in the farm every day. Most of the respondents also include their pets like dogs in their rice budget. Across the provinces, people usually cooks rice three times a day (breakfast, lunch, and dinner) because for them, rice is best served when it is hot and it hardens when it is cold, especially the NFA rice. They also prefer to eat rice that is newly cooked since it is hot, supple, and aromatic, and it induces appetite even if the viand is not so delicious (like dried fish). In Albay, mothers cook rice twice a day during summer (no school classes) to save on their money while in Iloilo they cook twice especially when there are classes (because their children prefer to eat outside during lunch). Meanwhile, some families eat leftover rice from dinner for breakfast the next day through reheating or frying (*sinangag*).

When it comes in choosing rice, they consider taste, aroma, texture (soft), and the quality of rice (well-dried and milled). However, financial constraints play important roles in their decision making. Most of the participants do not want to eat NFA, which they view as old stock that hardens when cold, is not as filling as other varieties of rice (mentioning that they get hungry after 2 hours), and tastes and smells bad. However, they still purchase this rice because it is the cheapest in the market. Some farmers still prefer to eat their own harvested rice rather than commercial or NFA rice because they view their rice as safe and “authentic” rice (unlike NFA rice which is mixed with poor quality rice). In Iloilo, one participant said that his family does not like NFA rice because of its smell, which they claim is not advisable for people with asthma. They perceive that this type of rice is laced with pesticides, which can cause indigestion and illness. Their claims are based on experience and gossip from those



that have experienced it. Some respondents are even willing to loan just to be able to buy good quality rice.

In terms of food and rice choices, most respondents agreed that women decide because they manage the family budget and usually go to the market. However, for Iloilo, men from non-farming households decide on what rice to eat because they are always out of the house during the day, so it is more practical for them. In Leyte, respondents differ on who should decide which rice and food to eat. Some believe that the farming husband should decide because he knows more about different kinds of rice. On the other hand, some say that the wife should decide because she manages the family budget. Some prefer to discuss rice-buying decisions together. Meanwhile, children can also be key influencers in their decision making because mothers are worried if the children will not eat them.

They are open to try new food as long as it is safe to eat, palatable (delicious), nutritious, affordable, available, and it does not come from China (associated with melamine). In Albay, they will try new food if it will be endorsed by the Department of Health and Bureau of Food and Drugs and if they see the results to other people (testimonials). In Bukidnon, they have strong opposition towards genetically modified crops and food like Bt Corn, as most local communities were associated with anti-GM organizations such as SEARICE.

Colored rice is not an issue. Most of the respondents asked associated colored rice with a variety with better quality. People perceive colored rice to contain more nutrients, to be organically farmed, and to have a good taste. In terms of price, colored rice was known to be expensive and first-class quality. Most of the respondents are more familiar with red, brown, yellow and black rice. Red rice is known for its aroma, nutritious, good taste and soft texture; however, they only find it on uplands and do not usually buy them because it is expensive. Black rice (believed as rice for supernatural beings or *engkanto*) is described as sticky and usually used in cooking rice cakes (*suman*) in Albay. Brown Rice is viewed as organic (with no chemicals) and nutritious rice, but some complained that it tastes bland, requires more water and takes more time to cook. In Iloilo, colored rice has a psychological effect on the children. For instance, they do not like brown colored rice. Also, they are shy when they have it as their packed lunch (*baon*), with a mother mentioning that classmates would tease their children if their rice was not white. Majority finds it difficult to convince their children to try colored rice. They suggested that if a colored variety of rice will be promoted, it is advisable to introduce it through fast food chains such as Jollibee or McDonald's or through TV advertisements. This would make them curious and eager to try it.

There were several groups that mentioned yellow rice is associated with reject rice or rice that was not dried sufficiently. In Iloilo, one consumer expressed his concern with the rampant manipulation of "bad quality" rice like NFA. He shared to us, that "over the stock" NFA rice were being re-milled to make it whiter. In Albay, some also associated yellow rice with the rice NFA provided which was yellow and rich in iron. Some did not like this NFA rice because of the odd taste and smell. In Leyte, locals only know of *samulawon*, the term for discolored (yellowish) rice grains brought about by damp conditions and prolonged storage. Traders usually reject *samulawon* because it is tagged as low class. In some instances,

traders still buy *samulawon* but price it lower than its regular counterparts. Meanwhile, for consumers, *samulawon* tastes not as delicious as pure white rice, with some mentioning its bitter taste.

Overall, households prefer to eat white rice compared to colored rice due to the following reasons: 1) because they have been used to eating white rice, 2) because white rice smells good; 3) because white rice tastes good; 4) because white looks clean and presentable to visitors; and 5) because it is common and available.

### **On Knowledge and Attitudes on Diet and Nutrition**

All respondents are aware of a healthy diet. However, top of mind for healthy foods include vegetables since these are readily available and inexpensive. In the case of farming communities, vegetables are more accessible than consumers. These are alternative crops grown either in the farm lands or in their backyards. Similarly, the farming household intake of meat is less compared to consumers.

Unhealthy diet is associated with junk foods, canned food, and processed foods. In the case of Iloilo and Bukidnon, dried fish is considered unhealthy. Its salty nature is said to cause urinary tract infection. Respondents are wary of the food they consume since hospitalization is expensive to maintain.

Concerns over health for both children and adults are similar. Since the communities have budget constraints, there are no distinct differences in the food consumed by adults and children. The overall topmost concerns are nutrition and proper diet, resistance to sicknesses, and proper hygiene. Exercise and avoiding bad vices such as smoking and drinking are encouraged for adults.

All respondents are aware of the unique requirements for pregnant women such as consumption of food that is good for mother and child and regular pre-natal checkups. However, to further support their limited budget, managing intake of food such as rice is advised by doctors to prevent caesarean delivery, as these are costly compared to natural delivery.

Across all provinces covered during the focus group discussions, the common factor that drives food and nutrition is the respondents' capability to buy. Their budget determines the kind of food prepared on a daily basis.

Common medical services available in the Barangay Health Center are immunization, circumcision, deworming, pre-natal checkups, dental, feeding programs, and house-to-house distribution of vitamins including vitamin A through the *Patak Pinoy* Program. Dental programs are not available in Bicol and Leyte. In addition, feeding programs are not offered in Leyte.

The abovementioned health programs are offered subject to budget availability of the barangay or municipality to which the respondents belong. Except for pre-natal checkups,

the remaining programs cater specifically for children. These programs are carried out by the Barangay Health Workers and/or Barangay Nutrition Scholar. However, in the case of Leyte and Bukidnon, there are distinct responsibilities of the barangay health workers and barangay nutrition scholar. The barangay health worker is responsible for general health programs while the barangay nutrition scholar is responsible for nutrition programs. In Bukidnon, the barangay nutrition scholar is responsible for ensuring proper execution of the feeding programs. Only Iloilo reflects expansive health programs such as anti-rabies, anti-polio and anti-filariasis. Uniquely, in Bukidnon, farmers are provided schistosomiasis treatments, a common ailment of farmers.

Missionary non-government organizations (non-Catholic) are common across all provinces covered. They provide similar dental, feeding, and vitamin distribution services; however, frequency is irregular compared to the local government. Only Leyte does not have any non-government organization presence for medical or health programs.

Overall, all farming and non-farming communities are familiar with good health; however, budget remains a constraint. Respondents are active in availing of medical services as these are free; however, knowledge and education on the programs are more expansive in the farming communities as compared to non-farming barangays.

### **On Information Sources**

The usual sources of information on health and nutrition are from doctors, health centers, *barangay* health workers (*barangay* nutrition scholars), television, radio (AM), newspapers, posters and schools. For most respondents across all regions, doctors are the best and most reliable source of information because they can be convincing and are known to be experts and professional, and thus can be trusted because they have studied in this field and can give accurate information. This is also the reason why they are more familiar with *Salamat Dok* (a television program on health and medicine) which airs on Saturday and Sunday mornings. They mention that they get tips on using herbal medicines as cheaper alternatives for pharmaceutical drugs and ways to avoid certain diseases through preventive measures from this program. Despite this, they still prefer the information to be disseminated personally (by doctors, nutritionist, agriculturists, Regional Health Unit), in the form of seminars or meetings, so that they could get an immediate response on their queries.

In Iloilo, they want the endorsement or introduction of products to be conducted in their own native language. For Albay and Leyte, they also trust the *barangay* health workers as information disseminators on health programs of the government because the respondents regularly attend seminars and trainings sponsored by the municipal/regional branch of the Department of Health, and they would usually share this gathered information and experience with their fellow locals. They also have the capacity to cover all the households in the local community because they go house-to-house just to conduct programs such as the *Patak Pinoy* or to give information on upcoming health programs in the local community. For Bukidnon, people also prefer actual campaigns like real demonstrations like the mothers' class (a week long seminar on food preparation), also spearheaded by

*barangay* health workers.

Almost all participants do not believe on the celebrity endorsements or television commercials because they feel that these people were just paid to endorse the product. They even said “To see is to believe,” which means that they want to try the product first. Testimonials from their neighbors or other trusted people are also a factor to encourage them to try because they can see the actual results from these people.

The most popular television advertisements for most respondents are Lactum (*Panatag* Campaign) and Knorr (*Sinabawang Gulay* jingle) across all regions. They even imitated the food pyramid sign and sang the Knorr jingle while answering the question, showing high retention for these advertisements. The reasons why they are more familiar with these advertisements are because of the frequency of them being aired on television, the comical nature of the advertisements, influence on children, and logical relay of information (such as eating vegetables and food pyramid in diet). However, in Leyte, they were not encouraged to buy Lactum for their children because it is expensive for them. For Albay, some have bought Lactum even before the television advertisement was launched because it was recommended by doctors for their children. On the other hand, the Knorr jingle educates the children on proper nutrition like eating vegetables. Hence, for respondents, they think that the “Makulay and Buhay” advertisement is more effective for children because they become used to eating unfamiliar vegetables like bitter melon.

### **On Vitamin A Deficiency**

In Bukidnon and Iloilo, generally all were familiar with Vitamin A deficiency, while in Albay and Leyte, most participants were not familiar with the said deficiency. Many respondents resorted to guessing when asked about the symptoms of VAD. While some have identified blindness, poor eyesight and loss of vision, some have guessed weakening body, malnourishment, paling skin, and inability to perspire. Iloilo respondents acknowledge that they got their information from school.

Related to their guessing, few participants in Iloilo, Leyte and Albay thought of iodine deficiency as VAD thus mentioned goiter as a symptom. In Iloilo, a farmer cited yellowish eyes and pale skin, referring to Hepatitis. In Leyte, one respondent also mistook VAD as intestinal worming therefore mentioned enlarged stomach. Meanwhile in Albay, a few participants thought that VAD is also related to kidney disease and hyperactivity. Across all provinces, respondents also mentioned other eye-related defects as symptoms for VAD such as near-sightedness, tired eyes and cataract.

Based on the focus group discussions conducted, people are not conscious on the vitamins or nutrients present in the food they eat, especially when it comes to vegetables. For them, it is enough information that they know that fruits and vegetables are good for their health. In Leyte, some people just care about feeling full after every meal regardless of how nutritious their food is.

When asked to mention food that are rich in Vitamin A, some respondents again guessed and thought that all vegetables and fruits contain vitamin A. Some examples of the more common answers are the following: yellow vegetables (squash and carrots), yellow fruits (papaya, banana, and mango), and green leafy vegetables (horseradish, bitter melon, water spinach, sweet potato tops, yam leaves, and *alugbati*). Other answers are seafood, milk, fish, lady finger, eggplant, chayote, *kulitis*, string beans, star apple, guava, and tomatoes.

Participants admit that they eat almost all of those mentioned because some households maintain a vegetable garden in their backyard. Some eat vitamin A- enriched food in every meal, every day, at least thrice a week, or at least once a week. In Iloilo, a respondent mentioned that adults in their households eat vegetables 3 times a week, while children eat only 2 times a month because the latter do not like eating vegetables that much.

Reasons mentioned why the respondents do not eat vitamin A-rich food and not as often are the following: 1) food are not in season or not available; 2) expensive if not found in the garden such as squash, petchay, cabbage, and some fruits; 3) easily fed up (*nakakasawa*) when eaten daily; 4) no time to prepare the food; and 5) children do not like eating vegetables. In Bukidnon, one participant shared that children do not like eating squash because it looks like feces when cooked.

The respective local government units of the areas under study conduct the *Patak Pinoy* program, also known as *Garantisadong Pambata*. For Albay, Iloilo and Leyte, *Patak Pinoy* is given out twice a year while in Bukidnon, it is held only once every year. Meanwhile, farming respondents in Iloilo say that they do not participate in *Patak Pinoy* because it is not available in their respective health centers.

Overall, the respondents find the program good and effective. Most Barangay Health Workers even go house-to-house to distribute vitamin A drops to children. People from Bukidnon hope that Vitamin A supplements should also be given to adults. Meanwhile, people from Iloilo say that *Patak Pinoy* supplies are not enough for their barangay, so probably not every child gets the supplement. On the other hand, in Albay, children receive Vitamin A drops but are misinformed. Many parents think that Vitamin A drops would make their children active and resistant to disease, while in fact, Vitamin A prevents night blindness.

There are no other VAD programs in the areas covered aside from the government-sponsored *Patak Pinoy* or *Garantisadong Pambata* except for a barangay in Bukidnon which also received free vitamins and medicines from missionaries 3 years ago.

### **On Golden Rice**

Majority are not familiar with yellow rice. Many associated yellow rice with old rice or rice that was not dried properly and artificially yellow-colored white rice. Everyone is interested to know more about rice with yellow grains.

There were distinct observations for several of the areas. For Iloilo, they compared yellow

rice with rice served in restaurants. In Albay and Iloilo, some thought of rice with Star margarine, a local practice where children put this margarine to make food look attractive and healthier. Some also mentioned about Arroz Valenciana, artificially colored rice famous in some provinces in the Philippines. In Albay and Bukidnon, they were asking if this yellow rice is the same as the NFA rice that is packed with iron. Some also mentioned that iron made the rice taste different from the normal rice they eat. In Bukidnon, there were several comments on yellow rice. Some associated it with yellow corn, rice porridge, spoiled rice, food for *engkantos*, and Muslim rice. Some also mentioned about rice called Golden Rice which was provided by SEARICE, wherein the husks are gold but the grain is still colored white.

Majority are willing to try yellow-colored rice. Their topmost consideration is food safety. Many prefer the government to endorse the rice as safe to eat, specifically the Bureau of Food and Drug and the Department of Health. They want to know if it is not poisonous, if it will not lead to indigestion, if it is not deadly, and if it will not result to headache.

The second topmost consideration is taste. Respondents want to know how the yellow-colored rice tastes compared to white rice and if it is delicious.

In the provinces of Albay and Iloilo, they were more inclined to try this type of rice if it was given for free. Both provinces also mentioned that for hard times like this, people do not usually care what the color of the rice is, as long as they can eat it. They also mentioned that Filipinos are really fond of trying new products and color is new and encouraging. Some of the respondents mentioned that they want first the approval of Bureau of Food and Drugs to make sure that it is good for the health.

In Iloilo, there were people who mentioned that they wanted to try the rice after others have tried it and the result is positive. In line with this, they have mentioned that color is not an issue as long as it is safe to eat. Some also mentioned that it is better if it can be a cure for hypertension. A cheaper price compared to white rice also encouraged respondents to try the product.

One respondent in Bukidnon said that he tried eating yellow rice in Cuba and Miami which he found delicious, but he is not ready to eat it regularly. Others will just eat yellow-colored rice alternately with white rice since it might make the skin colored yellow. There was a respondent who also mentioned that it is still rice and he is willing to eat it. Budget also came out as an issue in Bukidnon; as long as the rice is within their budget, they were willing to try it.

For those who are not willing and apprehensive to try yellow-colored rice, their main reasons were that they are not accustomed to yellow rice and it is not available in their markets. With Bukidnon's knowledge of Bt Corn, some associated yellow rice with Bt Corn and there might be problems when they eat it such as headaches, perceiving it is poisonous.

Respondents became more curious when they heard that yellow-rice contains Vitamin A.

Majority are willing to eat yellow-colored rice. Almost all agreed that technicians from Department of Agriculture and healthcare/medical workers from Department of Health are reliable endorsers. The respondents want the seeds to be certified and approved by the Department of Agriculture before it is released. Initially, they want the Department of Agriculture to give the seeds for free. Also, they like Department of Health to certify that the rice is good for their children.

Other than Department of Agriculture and Department of Health, they also prefer any reliable and popular healthcare and medical professional to promote it. At the local level, they favor the barangay health workers to educate them. On top of these, they would like to hear testimonials from those who have tried the yellow-colored rice. Others would even want proof of its Vitamin A content and its side effects. A good example of proof according to them is a laboratory test. Also, it is important for the respondents that the endorsers and promoters themselves have tried eating the yellow colored rice.

It is important to note that the respondents do not consider celebrities as reliable endorsers since they are not objective in promoting the product because they were paid to do it.

Other than what were mentioned, they also found the following persons and organizations reliable:

- Barangay captain
- Regional Health Unit
- Any person with authority
- Any reliable person that is popular other than celebrities

Some farmers in Iloilo mentioned that this rice should first undergo trial testing for at least three months before releasing it to the market, to determine if there are effects on the body. In Albay, most respondents will try first before allowing the rest of their families to consume it. Some even gave comments like “to taste is to believe” and “to see is to believe,” which makes them want to try it as long as they see the product. Some respondents said that they hope it is not like NFA rice with Iron because it is bland or tasteless, it needs more water, and children do not like it. However, they still have no other choice but to buy NFA rice due to budget constraints. It also came out that a lot of people are not satisfied with NFA rice because it tastes bad. Commercial farmers in Albay were not picky with the color as long as it did not taste bad. In Bukidnon, respondents’ distrusts imported rice and they prefer local rice.

Despite the Vitamin A content, only a few respondents are still hesitant to try because they are not familiar with the yellow-colored rice.

Majority of the farmers are willing to replace white rice with nutrition as the topmost consideration. On other hand, majority of the consumers are willing to replace white rice with

price as the topmost consideration. Another major consideration is the preference of children. If the children will like yellow rice, then parents are more willing to replace white rice with yellow rice.

In Iloilo, a lot mentioned they were willing to replace the rice because they also want to try yellow rice, it is good for the eyesight, and that yellow might be more exciting for children. Some also mentioned that they want the rice to taste the same and should have more nutritional content before they try it. They also realized that they will be saving on their budget by not buying Vitamin A supplement. If the price per kilo of this rice is higher by P1, majority find it expensive already. They are only willing to pay up to P0.50 premium for the Vitamin A content. There are also cases mentioned, however, when doctors would advise patients to avoid colored foods, because they affect some physiological functions (e.g. color of urine).

In Bukidnon, some farmers gave comments that they only trust farmers from this place, meaning they want rice that is locally grown. Others also said they were willing to try but not replace the regular rice they eat. Some were concerned with the price, mentioning that as long as it is affordable, they will eat yellow rice regularly. The color is also not important; it is the vitamins that matter.

For Albay and Bukidnon, there were a few who said that it was ok to replace white rice with yellow rice but it would be better if it subsidized just like NFA rice, because NFA rice is cheap, although NFA rice is only available twice a week. NFA is the only one with authority when it comes to rice, but majority do not like the rice being distributed by this agency.

In Albay, there were people who mentioned that yellow rice is still food and when people starve, they will eat it. There have also been associated of Golden Rice with Golden snail.

For those who are not willing to replace white rice with more nutritious yellow rice, their main reason is they are already used with white rice and they feel that they will not get used to eating yellow rice. Few people said that they can alternate the yellow with white rice until they become used to it and later on they can replace the white with yellow rice.

Majority never heard of Golden Rice. When the picture of Golden Rice was shown, all were looking at the picture intently. All appeared to be really interested. Others would even lean forward to look at the picture more closely. Almost all also asked for a sample of Golden Rice.

In Leyte, we heard several comments like it has the same color as honey, the grains look bigger and that egg yolk was added for color. Some realized that it contains Vitamin A due to it is yellow. There were also a few who mentioned it looks oily. Golden rice was also distinguished from NFA rice because NFA rice with iron is white with yellow spots and not the same as the picture they have seen.

In Iloilo, one participant has tried yellow rice in Hongkong (Korean's restaurant). The rice was cooked with coconut milk and it was not artificially colored. She said that the rice came



from Thailand and it tasted like it was mixed with star margarine. She found the taste good/pleasant. There was another person in Iloilo who said that they were given yellow colored grain rice as a gift from a friend in Germany. When asked if they tried to plant it in here in Philippines, he answered that they only ate it.

For Bukidnon, there were a handful of people who claimed they know about Golden Rice. One respondent said that she saw farmers having small amount of rice seeds. Another respondent claimed he read about it being grown in Nueva Ecija and Bulacan and that it is commonly being mixed with kidney beans in Cuba. Some also mentioned Golden Rice by SEARICE which is a different variety with the same name. Someone also mentioned vitamin A-fortified Rice in Ozamis. Others commented that he has heard it from a farmer who planted black rice which came from Luzon. One respondent whose child works at the Department of Labor and Employment cooperative brought home rice called "Golden Rice"; however, the colour of the rice is white. The respondent mentioned that the rice is expensive at Php1,800 per sack. One also mentioned that he heard over television that the President introduced Golden Rice being studied in Los Baños.

One respondent in Albay said that they have tasted it, like the rice in Saudi Arabia and India (pertaining to Biryani rice). Someone also heard about it in their National Training Service Program subject in a local school last 2006. She remembered that their teacher told them that it is being developed in another country that contain more minerals and showed a picture of Golden Rice to them. The teacher mentioned that as of that time, it was still an on-going experiment. Another person said that she saw it on a television program, Travel and Living, but no details were given on that segment.

Majority are not familiar with genetically modified organisms or genetically modified crops. All are interested to learn more about genetically modified organisms and genetically modified crops. All look more interested and they listen more intently when the definition of Golden Rice was read. Some of them even nodded as if they were agreeing and understanding with what was being said. Others were even taking down notes.

In Iloilo, only 1 respondent has heard that Bt corn contains harmful chemicals from the radio, Church, and other credible people (not just politicians). Also, since Bt corn is a major raw material in feeds production, they claim that its harmful chemicals will be transmitted to animals then humans. In Leyte, some mentioned that it is of high technology, which is handled by scientists and negatively promoted by civil society. In Bukidnon, genetically modified crops are said to be studied in University of the Philippines in Los Baños but cannot give any additional information about it; he claims that genetically modified crops are being planted in the southern part of Bukidnon in Kadilingan, but that is all he knows. According to the nongovernment organization KANIB, genetically modified crops are harmful, expensive, and poisonous. Children also suffer stomach ache after eating it. Respondents have heard years ago that the Church has banned genetically modified organisms. The Church has mentioned that genetically modified organisms are bad for the body; the more frequent you eat it the worse your body becomes. In Albay, one person said genetically modified crops are controversial, mentioning that they do not grow normally and that the

genes were modified. Genetically modified crops or organisms can cause cancer, and genetically modified crops are not accepted in organic farming. They said that they got the information about genetically modified organisms from the television, internet, and print media. Someone also read about genetically modified organisms in the newspaper, but it was not fully explained in detail. He just heard that it is like Bt corn. Someone also said he heard about Golden Rice and the genetically modified organism issue in Batangas, but they did not disclose any details of what they heard; they confirmed that information sources were not that reliable and the information they received was just part of rumors.

Majority are still willing to eat Golden Rice after knowing that it is a genetically modified crop. However, among the three household types, the subsistence farmers are somewhat hesitant not unless it was approved by the government or endorsed by the Departments of Agriculture or Health. Again, the topmost reason why they would still eat Golden Rice is the Vitamin A content.

For Leyte, Bukidnon, and Iloilo, they think that eating Golden Rice will help them save money in buying health supplements or expensive vitamin-enriched foods because it has already vitamins in it. They became comfortable when they heard that it has the same price than any other rice varieties. For Leyte, they even assured that they will try the product because it is already a complete meal even there is no viand with it; they even asked for a sample of Golden Rice so they can try it as soon as possible. They also suggested alternating the yellow rice with white rice to get used to it. For Bukidnon, they want to try the product because it is new and it helps to solve vitamin A deficiency. They also want to be assured that it must have a Bureau of Food and Drug seal and must be subsidized by PhilRice. The respondents looked interested when they heard the explanation about Golden Rice; however, they would like to know why the Church banned genetically modified organisms, and they were curious if it has side effects. Meanwhile, a respondent from Albay said that there is a lack of information about Bt corn, but a lot of farmers are against it and suggested that complete information about genetically modified organisms must be disseminated properly to get the farmers' buy-in.

Some concerns about Golden Rice were also raised by other respondents regarding its suitability to children's tastes, side effects, associated with Bt corn, its color if will be seen on the dark, and impact on the marketability of white rice as a source of their family's income. For Iloilo and Bukidnon, some groups are a bit hesitant about Golden Rice because it was associated with Bt Corn, which received negative feedbacks from other people. One respondent from Albay was really convinced that there is no incidence of vitamin A deficiency in their local community because most of the people have vegetables in their backyard hence see no need to eat Golden Rice.

The topmost common consideration by both farmers and consumers is safety followed by taste. On the other hand, major considerations prevailing for each household type is price for consumers and softness for farmers.

Some questions about safety were also raised like side effects to children, pregnant women,

and those that have diseases (hypertension, diabetes, etc.), chemicals used on seeds, place of origin (must not from China), will not cause indigestion, poison content, impact of color on health, advantage and disadvantage to health, and how it will be rich in vitamins if pesticides and insecticides will be used. Some respondents even suggested that upon release of this Golden Rice, a cooking demonstration must be conducted in their area, and the facilitator should be the first one to taste in front of them so they will see if the food is safe.

They also want to address the question on price such as affordability (cheaper than commercial or NFA rice), farm-gate price (equal or higher than white rice), and colored rice price expectation (likely to be expensive: red rice is P105 per kg). They suggested that it must be cheaper than other colored rice but should be positioned as premium rice.

They also want to know the effects of Golden Rice on health of adults if it prolongs their life since it has vitamins, other vitamins present, why Vitamin A was used or induced, nutritional content, and if it gives resistance to sickness.

They also need information about usage like the amount of Golden Rice intake to fill the stomach, deterioration of Vitamin A if Golden Rice is stored for long periods, storability, and process of cooking (such as water requirement). They also want a detailed but simpler explanation on how Golden Rice was developed. Out of their curiosity, they also asked questions such as why there is shift from white to yellow rice, is it readily available, how does it smell, why did the Church ban genetically modified organisms, if the parent seed originated from another country, and is it suitable in the type of soils of the Philippines. Some important comments gathered are as follows: respondents do not want Golden Rice to be sold through NFA because they perceive NFA rice to be of lower quality (smell, taste, texture) and they want testimonials from reliable and prominent people (not necessarily celebrities) that have tried. One respondent even told that color yellow might cause hepatitis and will make their teeth yellow.

Majority of the farmers across provinces are interested to grow Golden Rice since they are accustomed in trying new varieties. Their only major concern is the marketability of the rice. Some farmers in Albay have experienced planting premium rice; however, since it was more expensive, traders did not buy them and hence they went back to the traditional white rice which is easier to sell. They also asked questions regarding Golden Rice seeds such as the color of its immature grains, usage for second cropping, height, fragility of Golden Rice when threshed (because some seeds easily break when they feed them to mechanical thresher), availability in PhilRice, compatibility to different types of soils (sandy, loamy, clayey soils), growth to upland or lowland, and applicability to irrigated or non-irrigated lands. Questions on market introduction and distribution were also asked such as its market price, presence of established market, price compared to other varieties, availability in the area, appeal to consumers (color might scare them, taste and smell not good), impact on its market value when perceived as genetically modified crop, and if it is given for free from the Department of Agriculture. They even suggested that PhilRice should coordinate with the municipal branch

of the Department of Agriculture and the local government unit to easily implement the project. They also want the Department of Agriculture technicians to conduct demonstrations on sample farms so that farmers would see the yield results.

The following are questions regarding Golden Rice that the participants are interested in knowing:

*Comments and questions regarding Golden Rice seeds:*

- If the grain is not yet mature, will the coat be green just like any other grains?
- Can it be used for the second cropping?
- Will it grow tall?
- Are there chemicals placed in the seeds?
- Does PhilRice already have the seeds?
- Sometimes after being processed in the thresher, the seeds are damaged. Is Golden Rice seeds fragile when threshed? Because if it is, then it will not be able to be used for the next cropping.

*Comments and questions regarding production and, length and yield of harvest:*

- How long will it take to harvest?
- Is the harvest yield the same or better?
- Will it affect the neighboring farms which have a different variety of rice? Will it lead to cross breeding?
- Is it prone to pests?
- Will it grow well?
- Is it the same with other rice?
- Can it be planted directly?
- Will it require more fertilizers?
- How it is planted?
- Does it germinate easily?

- Is the color of the stalk yellow? (because if it is, the color might help drive away birds)
- Is it resistance to wind and pest?
  - How many is the cropping period before the seed will be replaced?
  - Is it open to cross pollination?
  - Is it seasonal?
  - How about method of planting? Is it direct seeding or broadcast?
  - Can the second-generation seeds be planted back in the field?
  - Can it be cross bred with black rice?
  - Is it safe if placed together with other rice varieties?
  - Does it have any chances of mutating in the future? Will it darken?
  - Will it have the same color and Vitamin A content after being replanted?

*Questions regarding resistance to climate/weather:*

- Is it resistant to rain or can it with stand the wet season?
- Can it withstand the heat during dry season?
- It is applicable with our climate/weather?
- Is it resistant to sudden changes in weather?
- Is it resistant to flood?

*Other questions:*

- Is it for consumption, commercial, or both?
- Who developed it?
- Where did the yellow color come from?
- Any specific storage requirements?
- One respondent was hoping it will have better feedback than BT Corn.
- Where did it originate?

- We want to see the results first from the laboratory before will be convinced.
- Is being a genetically modified organism the reason why the Golden Rice is colored yellow?

### **Recommendations given by the Respondents**

- **Develop Golden Rice in RC10, RC18, and IR82 varieties**

These are the varieties that are well accepted by both farmers and consumers. The first two varieties are considered as good varieties which have good yields and are most likely to be planted by the local farmers. For IR82, consumers are accustomed to the characteristics of this variety of rice, making it very acceptable in the market.

- **Modify, if not change, the Golden Rice name**

Although most provinces are attracted to this, there have been many instances wherein Golden Rice was confused with other varieties or brands. Many have claimed that they have tasted this even if it has not been developed yet. In addition to this confusion, there were many instances that Golden Rice was associated with golden snails, a known pest of rice. Further research should be made as to what acceptable name the rice could be given that can disassociate itself with other negative impressions.

- **Tie up with local government units and local branches of the Department of Agriculture**

Locals have high trust with the local government, especially with the Municipal Office of Agriculture. They have high interaction with those in this office, and this can easily be tied up with local programs, making the introduction of Golden Rice easier. They are willing to try anything the Department of Agriculture gives to them, even without sufficient information. With this, their main source of seeds should from this Department. They do not believe that the government would issue seeds that are not good; therefore, they rely fully on the government's judgement as to what seeds are right to plant in the area. Because of such high levels of trust, they would prefer that information be delivered through this department, as it is more reliable. With this, they would prefer that a representative would come and lecture them on new varieties of rice, as they consider interaction a very important factor in receiving information. They would trust the local rather than the national government. The national government might even politicize this event, degrading its reputation. However, it is unadvisable to tie up with the National Food Authority, as most have negative perceptions regarding rice coming from this agency. However, for distribution, it is best to assist these agencies to make sure that most of the population is allotted with seeds.

- **Orient locals on genetically modified organisms and vitamin A deficiency**

Currently, there is limited knowledge on genetic modification and vitamin A. This also

highlights the fact that there has been no influence from anti-GMO organizations or the Church regarding the manner. However, the respondents made it clear that they were interested in learning about the topic. Locals tend to believe in whoever informs them first on a certain topic. Therefore, it is advised that these locals should be oriented properly on genetically modified organisms and on vitamin A deficiency, as knowledge in these areas are still limited. If other parties go ahead and provide information to them, they may tend to believe this even if the information is not validated. Proper orientation would eliminate misconceptions on these topics. This can be done by orienting staff from the local government (such as the agricultural technicians, barangay health workers, barangay nutrition scholars) who will then be in charge of orienting the locals in their respective areas.

- **Prioritize conducting seminars and workshops to adults**

Interaction is held as very important to the locals. This is because when in doubt, they could easily ask directly to the facilitators of the event. This way, they could understand the topic more clearly and there is that psychological effect that they are involved in the project. They feel that they are important to the project, therefore would give full cooperation to it. The acceptance would be greater than if it was just advertised in the television. Workshops and demonstrations can be done on Golden Rice during planting and in consumption (such as cooking demonstrations). Also, proper information should be given, such as how to determine if the rice was artificially colored yellow.

- **Use health officials as endorsers for adults and fast food chains for children**

Most adults would trust anyone from the medical profession in delivering information regarding health and nutrition. This would also be effective if seals were incorporated, such as those from the Department of Health and Bureau of Food and Drugs. However, to entice children, tie-ups with fast food chain commercials would be better. Children are attracted by food advertised by these, and would tend to accept anything shown in these advertisements. In addition, there should be a catchy tagline, jingle, or sign that could easily be associated with Golden Rice to make it remembered.

- **Position Golden Rice as better than NFA Rice but at a similar price**

Price is a very crucial factor in deciding the type of rice to purchase. If possible, Golden Rice should be positioned as more nutritious rice but at the price level of rice distributed by the National Food Authority. However, tags such as “fortified” should not be associated with Golden Rice, as this may produce negative perceptions due to the association with fortified rice distributed by NFA before, which was perceived as bad quality. They should highlight that it is rich in Vitamin A, which is needed by the body.

- **Distribute to local farmers to be planted (through the local branch of the Department of Agriculture) before releasing it to the consumers**

Consumers as well as farmers would trust locally produced rice rather than those planted

from other places. They assume that the rice produced locally is not oversprayed with pesticides and fertilizers, which is safe for them and their children. Because of this, they would have positive perceptions with locally produced rice, and they would associate food safety with it. This shows that locals have trust highly their local farmers and their produce. Because of this, it is ideal that local farmers should be handed the seeds first and this should be planted locally before distributing the consumers. For testing purposes, Golden Rice can be distributed for free at small amounts, for example 2 kilograms per farmer per hectare. For consumers, Golden Rice should not be distributed through NFA; instead, this can be distributed through schools, health centers, and local market vendors.

### **Recommended Course of Action**

Based on the findings of this study, it is clear that the acceptability of Golden Rice is high in the rural areas. However, this may have been brought about by the lack of knowledge on certain topics such as genetically modified organisms and vitamin A deficiency. In order to derive different results, focus group discussions should be redone after introducing these topics to them.

In addition, focus group discussions should also be conducted for urban households, as these are also targeted consumers of the said product. Farmers mention that planting Golden Rice is highly dependent on the size of the market. If consumers from major cities do not purchase the product, farmers may be reluctant to plant it. Also, because of the unexpected results gathered from the focus group discussions, urban dwellers may also have different point of views regarding the topic. It is therefore imperative that insights be extracted from this type of participants.

The results gathered in this study lack quantitative analysis, as the method used focuses more on insights. Therefore, it is suggested that a survey form or questionnaire be developed based on the results of this study to give a quantitative view on the different issues. This way, insights may be more conclusive because of different analyses that may be used to treat the data.



## **Appendix: Provincial Findings**

### **Bicol Province**

#### **Non-farming Households**

##### **A. Rice and food choices**

The respondents gave almost the same when it comes to choosing food for their children. Factors like taste, nutrient content and affordability (suits their budget) are their consideration. Meanwhile, most of the respondents said adults have to reduce their food intake because they are more prone to diseases like hypertension, arthritis and heart attack. But for some, adults are not choosy with foods, they just eat whatever is available in their home because of the budget constraints. They also give priority to their children so they just eat what is left for them. Adults in one barangay are more health conscious because they also considered reducing mind stress, eating organic and natural and foods with less MSG. For all barangays, mothers are the decision maker in rice and food choices since they know what to cook, they handle the budget for the family and they frequently go the market. However, they may be influenced by their children because they also give priority to what the children want for them to eat right. If their budget allows, they follow what their children wants to eat.

Generally, rice consumption depends on the size of the family. On the average, families with less than 5 members consume 1-1.5kg while families with more than 5 members eat 2-3kgs of rice per day. In one of the barangays, working adults consume about 50- 75% of rice while in the two other barangays, children eat more than adults because they are more active and their parents give them priority to eat first. They agreed that young men (teenagers) eat more rice than adults. Most of the mothers said they cook rice thrice a day especially during school days because they have to feed their children rice and prepare them packed lunch in the morning. When it is summer, they only cook rice twice a day to save money so they only eat bread or sometimes drink only coffee in the morning. One person said that his family only cooks once because they want to save on money.

When it comes to choosing type of rice, they consider the taste, aroma and color (white) of rice. However, due to budget constraints they can only avail of the NFA rice because it is cheap. When asked if they are willing to try new food, they said that they are willing to try these given some information. Someone actually gave this quote "To taste is to believe". Taste, nutrient content and affordability are important considerations they want to know before trying these foods. In addition, participants from a barangay also wanted to ask for testimonials, expiration date, ingredients (less salt), benefits and suitability to taste of their children.

Most of the participants are familiar with colored rice and we generated different reactions from them. In general, colored rice (red and brown) for them are nutritious, delicious and looks attractive. They also thought of discolored rice (those rice that are not well-dried) as overstocked rice, with bad odor, and hardens easily (Laon). One person commented that brown/unpolished rice is difficult to cook (takes long time), absorbs more water and hardens

when already cold. Most of the respondents also gave insights about NFA rice with Iron which has bits of yellow grains. They said that this rice has bad odor (malangsa), overstock and with preservatives/chemicals. But more than 50% of the respondents said that they will still buy that rice because it is cheaper. They are also familiar with black/violet rice (Maragadan) as rice use to décor rice cakes (suman) and rice for supernatural beings (bigas ng mga engkanto). In general, they still prefer white rice because they got used to it and is readily available in the market. Price is an issue because they associate colored price as more expensive than ordinary rice. 30% of the respondents in a barangay are willing to switch to red rice if this will be widely available and cheaper in the market.

## **B. Knowledge and attitude on diet and nutrition**

Respondents' insights about healthy diet showed that they more concerned about nutrition and budget. Participants from a barangay also think they should include organic and natural foods in their diet. All agreed that nutritious foods are vegetables while foods not nutritious are junk foods, canned and processed foods and alcoholic beverages. One person in this barangay said that for him dried fish is good for their health because that is only available and cheap source of nutrients. They usually eat vegetables and rice or they alternate it with dried fish.

The top 3 usual concerns about their children's health are hygiene, healthy body and mind and avoidance of disease (not malnourish). For adults, respondents are more concerned on their nutrition (balanced diet), less food intake and prevention of diseases. Some respondents in one barangay are not concerned with what they eat because they are more budget conscious. Meanwhile, in another barangay, adults are more health conscious on what they eat to avoid getting sick. They even have regular blood pressure (BP) check-up, reduced intake of fatty foods and more exercise. They are all concerned that their kids and adults will not get sick because they do not have money to treat illness. Meanwhile, their health concerns for pregnant compose of balanced and proper diet, prevention of stress and fatigue and avoiding sweets and salty foods. They also reduce their food intake to prevent the baby from getting bigger in their womb to avoid caesarean operation which is more costly for them.

They are also familiar with medical services and health programs in their barangay. These programs initiated by municipal/barangay health centers include immunization for children, free consultation, Patak Pinoy, free circumcision, feeding program, free medicines and vitamins and deworming. For a certain barangay, they also have stay-in midwife to conduct free child delivery. Most of the respondents said that they only avail of the services by schedule, when it is free and when they feel sick. Operation Timbang was implemented by BHW (Barangay Health Workers) and they conduct it house to house so that all children in the barangay will be covered. Most are familiar with government programs about health services however only few people are not familiar with NGO's USAID: save the children campaign for disaster. In this project, they gave medical devices like sphygmomanometer (for BP) for each BHW and first aid kits for children.

## **C. Information Sources**

For the respondents, the best source of information is TV, doctor and health center/BHW. In addition, some people in a barangay have access to the internet in the area and believe that it can be a powerful source of information. However, some people disagreed that only few

have access and know the internet. More than half of the respondents in all barangays agreed that the doctor is the most reliable source of information on nutrition and health because they have expertise and knowledge on this field.

Some said that they only visit their doctor once they feel sick so TV is second source of information they trust because it is more updated and had wide reach. One person in another barangay testified that information on TV will not be aired if it was not true or bad for the health. They even watch TV programs like Salamat Dok just to get tips on herbal medicine and nutrition. However, about 60% of the respondents do not believe in celebrities as endorsers because they think that these people were just paid to promote the product. Barangay Health Workers are also voted as good source because people already know and trust them, they also trained with DOH in municipal and attended seminars. After the training, they will disseminate the information to each household through visiting them in their houses.

The most popular TV commercial is the Makulay ang Buhay ad and Lactum for most of them. They even sang that jingle of Makulay ang Buhay and proved that it is effective among their children because they were encouraged to eat vegetables. For a barangay, Lactum is the most popular ad for them because of the food pyramid and essence of complete food. Two mothers confirmed that the product is effective for their children. Even before Lactum ad was released, they already used Lactum for their children as prescribed by doctors. One said that even for PAU linament was endorsed by Willie, she already bought and tested the product.

#### **D. Vitamin A deficiency**

More than half of the respondents (70%) are not familiar with Vitamin A deficiency (VAD). When we asked them if they know about Vitamin A, they showed blank faces and were silent. In a barangay, only one was familiar with VAD while others were guessing (answered disease in kidney). When she is prompted that it is a defect on the eye, others answered that symptoms of VAD is cataract. In two barangays, they thought that VAD person is prone to diseases, hyperactive children, low blood and malnourished. They also had difficulty in identifying foods with Vitamin A. They guessed vegetables, seafood, yellow foods (banana, papaya, mango), tomatoes, eggplant, and squash. In one of the barangay's, one kid overheard the question and whispered to his mom that food with Vitamin A is squash.

In terms of frequency of eating, responses were different per barangay. In a barangay, they seldom eat this food (squash) because children do not want it and they get sick of it if consumed daily. In another barangay, they were able to eat vegetables (malunggay) every day because it is available in their backyard. In a certain area, mothers responded said that they were not able to eat often because of budget constraints.

Only mothers were familiar with Patak Pinoy/Garantisadong Pambata program of DOH. They even related that BHW conduct them through house to house, hence almost all children that are 5 years and below received Vitamin A. However, most mothers were confused on what is the purpose of this program. They said that this was not properly explained to them regarding on the benefits and importance of Vitamin A. Most of them thought that it effective because children became active, healthy and developed resistance against diseases.

## E. Golden Rice

Generally, participants do not have an idea and have not seen yellow rice. They thought it is rice porridge (lugaw), discolored, NFA with Iron and Star rice (mixed with margarine). Despite they do not have an idea, they are willing to taste it. They will taste it if its delicious, affordable, available, only choice left (no white rice anymore) and endorsed by government as safe food. They became more curious about this product when we ask them if this rice is fortified by Vitamin A. They said they want to taste it given that a reliable (trusted) person will tell it to them, affordable, nutritious, no poison, cheap and its only available (no white rice anymore). Someone said from a barangay, he would try this, "To Taste is to Believe". One commented that they hope it is not like NFA rice with Iron because they describe it as blunt tasting, needs more water and children do not want it that is why they do not like NFA rice. They still have to buy NFA because of their budget. They are also willing to replace white with yellow rice if it is more nutritious, delicious, and affordable than white rice. In another barangay, mothers replied that they are willing to replace white rice if their children will want yellow rice and it is the only available rice (no choice). One mother also commented that her children do not eat NFA rice because they already know what they want. But one person from their group said that yellow rice is still food and when people starve, they will eat them.

Upon seeing the picture of Golden Rice, they all looked intently at the picture and curious, they even went closer to see the picture. In two barangays, they do not have an idea, even heard or seen, Golden Rice. In one area, a person commented that they have tasted it, it's like the rice in Saudi Arabia and India (pertaining to Basmati rice). However, in another area, two persons saw and heard something about Golden Rice. One said that she heard about it in their NSTP subject in Immaculate Conception School of Nursing last 2006. She remembered that their teacher told them that it is being developed in other country that contain more minerals and showed a picture of GR rice to them. As of that time, it is still an on-going experiment. Another person said that she saw it on TV program, Travel and Living, but no details were given on that program.

Almost all respondents in three barangays do not have any idea about GM crops. Hence, they look more interested and want to try this product even no information was given yet. Only two persons gave their insights about GM in the three areas. One person said GM crops are controversial, do not grow normal, genes were modified while another person said they can cause cancer and GM crops are not accepted in organic farming. They said that they got the information about GM on TV, internet and magazine. We observed that they looked doubtful of the product after hearing that GR is GM crop.

While the moderator is reading about GR, all people look more interested and they listen intently. Some of them even nodded as if they were agreeing and understanding what has been said. Only two persons, seemed not interested and a bit hesitant on the product. After the explanation, almost everyone accepted that they will taste GR even if it is GM because it is nutritious, they want to explore this new food, if they starve and if this is their only choice. But this one person who was against GR, commented that she will not try this crop because it is not acceptable in natural farming. She also commented that in their barangay, people do not need this product because there is no VAD incident and they have abundant supply of foods with Vitamin A in their area because they plant them in the back yard.

For those who want to try, they need testimonials (information/results from those who already tried), information about the taste, origin, price (affordability), procedure of cooking, safe for children's consumption, no poison and must be endorsed by government. Some of them even ask for a sample or ask us if we brought some for free tasting. In conclusion, FGD participants from chosen barangays are willing to try Golden rice. They even commented that year 2012 was too long for the release of this rice.

## **Subsistence Farmers**

### **A. On Rice Farming**

Several reasons were given why most of the subsistence farmers are involved in rice farming, one of the most common reasons given was this is their source of food, particularly rice to feed their family. There were also other reasons given like they needed the money/income from farming to support their family. Family support was one of the most important reasons given by these farmers. This already includes money to send their children to school because they believe that they were not able to graduate from school and this was the most important thing they could provide their children. One also mentioned that this is the only job he knew and he needed to continue this to earn a living. One common reason provided was to pay-off debt, which they needed to prioritize for them to borrow cash for the next season.

When we started asking their problems on farming, these people started to be more active in the discussion and some even talked at the same time to have their problems heard. One of the most frequent reasons given was calamities like typhoons and Mayon's eruption which damages their soil and their crops. For some barangays, one problem was irrigation. Their irrigation has not been fixed due to typhoon Reming's damage in 2006, they also have not been getting enough government support to fund this irrigation problem. One barangay had its irrigation fixed only last year and they did not have working irrigation for 11 years. The people in this barangay complained of higher malnutrition rate due to farmers not being able to plant rice and other nutritious food. Same as others, they also have financial problems in terms of start-up capital. They have also been complaining about the high cost of fertilizer. They say the price has doubled compared to last year's prices. Another problem mentioned was the high occurrence of pests, one of which is the golden kuhol.

For the rice variety used by farmers, most have used the seeds provided by government that is for their recent harvest. They say they prefer using the IR-18, which is a certified seed because of its flexibility to have good yield both during the summer and rainy season. During the summer, 18 is commonly used, some also mentioned using 56, 128, 134, 122, 14 and 144. For the rainy season, some say they still use 18, some change the variety. Some mentioned they use smaller plants so that they can withstand the strong winds brought about by typhoons and are more resistant to floods. These included variety like 128, 146, 144 and this so called 75 variety where it only takes 75 days to harvest upon planting. This then has a lesser probability of getting damaged by typhoons because of its reduced harvest days. One also said he used miracle rice.

There is this barangay who mentioned that they use other variety than others because of the different soil they have. They call their soil, sandy loam because of its texture and consistency. It is sandier than the other barangays because of its closer proximity to Mayon.

DA makes soil tests to check what rice variety is best for them. They usually follow what DA says because of their good experience with DA's recommendations.

They prefer these varieties because they have tested these already and, in their experience, they produce higher yield. They also said these used less fertilizer. We also got this response that if one changes his/her variety ahead of others, he will be infested by tungro. The logic behind this is because the disease will be attracted by the new variety instead of the old ones.

Before they try a new variety, they want to know the procedures in planting this new type of rice. This includes the amount of fertilizer needed, the way it should be planted, the amount of water this new variety will need and the pesticide needed. They are also interested in the yield, resistance to pests and flood and testimonials from those who have used the variety. Some also mentioned that they wanted a demo if this new variety would grow in their soil type. They are concerned that they have a different type of soil and what grows in other areas, may not grow properly in this area. One barangay mentioned they will try the variety in small portions of their land to test how well it does. This same barangay was also concerned what country this variety originated from and they wanted to get more information from DA.

Technicians from DA go to these barangays on a regular basis, some even on a weekly basis, to provide them the information on new techniques or new varieties that they can use. There are also a few suppliers/distributors of fertilizer and pesticides that go to these areas to give them the same information the technicians provide and also how to use their products. They also provide them how to use the products they sell and how they can help these farmers. One of the most effective sources of information includes testimonials from other farmers because these are actual results and this makes them more confident that this will work in their farms.

There is no contest that the men make the decision on what variety will be planted in their land. There were a few who also mentioned that the men just inform their wives that a particular variety will be used, but it does not go further than that. The men still do the decision making.

On the type of rice they use, the majority use certified seeds, which was given by DA the last time. Other than that, they use their own saved good seeds or exchange from other farmers. Some change their seeds once in a while so that their land will experience a new variety. They use the same plant twice or thrice because after that, the plant will yield lesser.

There was a program last year where the government subsidized seeds for farmers and most of them are using these seeds right now. One of the barangays had a bad experience with the seeds provided by DA, they say only a few of the plants lived and the figure provided was 30%-40% were left, the rest did not survive. They were hesitant to try new seeds from the government due to this. The season was wasted due to this problem they had.

Most of them said they used the seeds because it's free. They no longer have to buy, why not use it? These seeds were also certified by DA and should most probably provide a good harvest. There was also a feedback that if they did not get good results from the seeds in one area, they will move the seeds to another part of the land and experiment on the procedures. If this does not work well, then they will no longer continue planting this seed variety.

The crops that are grown in the areas include vegetables, patchay, eggplant, tomatoes, bitter melon, chili, root crops, squash, cucumber, peanuts and cabbage. Some also mentioned that they only plant rice because of the condition of the soil and the irrigation makes the land muddy and too watery. If the condition of the land is somewhat dry, they can plant others, but other than that, they only plant rice and a few vegetables. There was one barangay who mentioned they still plant corn, the type of corn they have is yellow corn and hybrid, although this is not done on large portions of the land, this is done mostly for intercropping. When they were asked about Bt Corn, almost all of them had no idea what it is. They had blank faces and they did not have a clue what it is. Some were even looking at each other to see if anyone knows the answer.

The amount of rice kept for them depends on the family size and the size of the land. As we asked them to estimate how much is left for the family and how much is sold, they said around 30% to 50% is kept and the rest is sold. The amount left to them includes the good seeds that will be kept for planting for the next season.

## **B. On Rice/Food Choices**

For the children, the parents mention that their children should have a healthy mind and body. They make an effort to avoid malnourishment. With this, they feed their children vegetables, fish and rice but again, this depends on their budget or the money they have for food. Someone also mentioned that kids eat different now, he said they like fried food, just like what they see on TV and they do not like the traditional food their parents prepare. The food should also not spoil easily so that they can prepare it the next time if there are leftovers.

For adults, they consider a balanced diet and less on meat and fatty food. The diet should also include vegetables. Another reason that we kept hearing was that the food should taste good. We also got a feedback from one barangay wherein they mentioned that food for children and adults are just the same; this is caused by the budget problem they have and they cannot afford to prepare different food for adults and children. For older people, they also want their food to be softer because they start losing their teeth and have a hard time chewing. Others also mentioned eating less rice due to their case of diabetes. During fiesta, they definitely eat a lot of meat because most of the people prepare special food, which is meat for them.

The rice prepared for each family depends on the family's size. A family with a size of 5 to 10 will consume an average of 3 kilos per day. On the other hand, a family of less than 5 will consume around a kilo of rice. For subsistence farmers, we got mixed reactions on who eats more. One barangay reasoned that children eat more because they eat lunch in the morning and bring packed lunch with rice on a school day. Others said teenage men eat more because they work and are in their growing stage. Teenage women on the other hand are more conscious with their figures at this stage so they eat less than men eat. Another barangay said that adults and children eat almost the same amount of rice. We got a consensus that parents give priority to their children in terms of food. They make them eat first and whatever is left, this is what they eat. Almost always, all barangays cook rice thrice a day. There are a few exceptions during summer months because children do not go to school and mothers do not cook rice in the morning. They prepare what's left the previous night or

make them eat bread. Parents still prefer rice because the children are not able to concentrate as much when they eat bread in the morning.

In terms of the characteristics of rice, they want to have tasty rice, rice that is soft, white, well dried, newly harvest, aromatic and sticky. We also noticed that they prefer to have good rice rather than have a good viand. Rice is more important to them in almost all barangays. A few also mentioned that they have no preference as long as they have something to eat. The women make the decision on what rice to buy or what food to prepare. Most mentioned that she holds the money, goes to the market and cooks for the family. The men are usually hands-off on this particular topic. As soon as they earn money or get their salary, they surrender or give their money to their wives.

All the respondents were willing to try new food and there was no reluctance. They wanted to know if this new item tasted good, the price of it and they will also check the label to see its nutritional content. They were also willing to eat this if it was going to fill their stomach. Their willingness to buy depends on the price of the item; they were more inclined to buy if it was within their budget. They were more willing to eat it if it was given for free. One of the usual items they wanted to know was the process on how to cook it.

There was also one who said he will have a taste first before he gave it to his family. He would not give it right away to his children because it might not be safe for them. More items they wanted to know include the nutrients it has, if it has no preservatives, approval from BFAD/DOH and if it will make the body healthy. There was also a couple who said they wanted to know what country it came from and they said they did not want it if it came from China due the melamine scare in the past. Most also preferred testimonials from the people they knew because this will make them know if it was effective or good rather than rely on commercial ads.

A good number said that red rice tasted good, healthy, looked attractive and is natural. This is also known to be first class rice which makes it more expensive. Some also commented that it dries up easily and needed more water when cooked compared to regular white rice. We also heard a comment that this treats beriberi. Only a few have eaten this type of rice because it is seldom available in the market and if it available, the price is very expensive. This type of rice is planted in the mountains and not in their area.

For all barangays, they still preferred white rice because they got used to white rice already. They said white rice is good, even if it is only eaten with dried fish, it is already acceptable. Some even put pandan leaves to make it more aromatic and it makes them eat more due to this. Someone mentioned he preferred brown rice because this takes four months to harvest and uses less fertilizer, making it more natural and healthier than white rice. Some also said if other colors were cheaper, they will switch to white rice.

A healthy diet should be a balanced meal, which includes vegetables, sometimes meat, fruits and fish. Food that is healthy also include root crops and malunggay which is grown in their land. Food that is not healthy include junk food, instant noodles, dried fish and canned goods. Eating too much sweets and salty food is also not good for the health as mentioned by the respondents. Food with preservatives is also not healthy for them. In a couple of barangays, they mentioned that they mostly have healthy food because what they have is always fresh



because they grow their own crops. They also eat a lot of vegetables so they remain to be healthy.

### **C. Knowledge and Attitude on Diet and Nutrition**

The farming households are more concerned about their children's health regarding proper food and nutrition, strong body and mind, prevention of malnourishment and other diseases and budget to buy food and medicines. For adults, they are more concerned about prolonging their life, monitoring their diet (avoid fatty foods) to avoid hypertension and reducing stress. But one respondent said that health concerns for children and adults are the same. For pregnant women, different responses were gathered from the participants. In one barangay, they have the same concerns about the health of their children and pregnant women. Some answered pre-natal check-up, immunization and less food intake (less carbohydrates, no soft drink and medicine intake) so that the child will not grow inside the womb.

Most of the women respondents enumerated medical services like immunization, pre-natal, health center, medical mission, free consultation and free medicines for children. These services were supported and implemented by Baranggay Health Workers (volunteers) and midwives. In some barangays, midwives just visit the barangay by schedule (because of location and population size) but in some barangay, they have stay-in midwife who also conducts free child delivery in their health center. In other barangay who was hard hit of typhoon, they still do not have health center because it was destroyed by typhoon Reming, hence they conduct the medical services in the barangay hall whenever the nurse or midwife visits them.

Because some barangays do not have their own health center, people only go by schedule or when the services are free. For other barangays (those who have health centers) people only go for check-ups when they feel sick but older people go more often to get their blood pressure check. In one area, they are also familiar with programs launched by NGOs like the Tanchuling School of Nursing where they conduct free seminars and orientation for mothers every year. They said that most mothers attended this seminar and noticed that children looked healthier after the seminar.

### **D. Information Sources**

For subsistence farmers, the best source of information about health and nutrition are BHW, school (teacher), doctor/nurse and TV programs like Salamat Dok and Umagang Kay Ganda. They believed more on the information given by Doctors because they respect their expertise, believed as trained professionals so these people know what they are doing. However, BHW are usual disseminator of information from DOH in their municipal. They were dedicated to conduct house to house seminars so that mothers will be informed.

Older men were more familiar with Salamat Doc because they give helpful tips on how to avoid certain diseases. One person said that he believes in the herbal products featured in the program because it is a cheaper source of medicines. They also have attended the seminar sponsored by Intervida (an NGO) on health and education. Umagang Kay Ganda is most popular for mothers because they usually wake up in the morning and stays at home to prepare meals and manage the house chores. Adults do not believe in TV commercials

endorsed by celebrities because they think that they were paid. They even commented that they do not like the commercial of LBC because it gives wrong information not good for children. We have heard negative responses about this ad, some said that it misspelled the word remittance which children might think that it is right, others said the DepEd should prevent the airing of this ad because it gives bad impression about education here in the Philippines.

Almost all respondents were familiar with the Lactum commercial (they even imitated the food pyramid). In some areas, the most popular ad was Knorr “Makulay ang Buhay” because their children were encouraged to eat vegetables. They believe that this is more effective to children especially now that some children were not used to eat vegetables like bitter melon.

### **E. On Vitamin A Deficiency**

Only about 10% of respondents were familiar and have answered. People kept on guessing on what is VAD. They have identified that person with VAD are malnourish, with night blindness and poor eyesight, immune system is weak, eat less food and has big tummy. Regarding on foods with Vitamin A, they still kept on guessing while others were silent. They answered foods like banana, vegetables, fish, eggs, squash, yellow fruits, malunggay, yellow corn, mango, root crops and liver. Since they heard that foods with Vitamin A are vegetables, they answered that they eat these foods regularly, even every day. They also include vegetables in their desserts. Someone said that almost people there are vegetarians, they eat a lot of vegetables since they are available everywhere and in farms. They answered that they only consume squash twice a day because it is (saturating) “nakakasawa” and children do not prefer them. For some foods they mentioned, they were not able to eat them because of budget constraints.

According to the women respondents, “We participated in Patak Pinoy program”. They all agreed that it is effective because they noticed that children do not get sick more often, became active and not malnourish.

All respondents were only familiar with DOH/Municipal health center’s programs on VAD. They did not mention any NGO initiative campaigns to resolve VAD in their barangay.

### **F. On Golden Rice**

Generally, people were not familiar with yellow rice. Some people asked if that is spoiled rice or not well dried. Some even associated it with Arroz Valenciana, star rice (with margarine) and NFA with Iron. Although they do not have idea about it, they are willing to taste the yellow rice because they feel that taste is good, color encourages more intake, if it is not poisonous or no white rice available. Someone said that people are experimental or explorer by nature that is why they want to try this yellow rice. Some replied that they want first the approval of BFAD, make sure that it is good for the health, if it is cheaper and it depends on how it is cooked.

Most of them will still eat the yellow rice if that someone who would tell them is really the right person. They want that reliable persons who would tell them must be popular but not necessarily celebrities. They said it is difficult to trust celebrities because they were paid. They suggested that barangay nutritionist should be the one to tell them because they trust them more. One mother stressed that “they believe in BHW because they will not tell

information that will make our health at risk ('di sila magsasabi nang bagay na ikakamatay namin'). Some want to be assured if it has really vitamins and they want proof. However, one person said that they will not eat that yellow rice if this is like NFA rice because it has bad taste.

Most of the respondents said that they are willing to replace white rice into yellow especially when it is free, affordable, and nutritious and has been tried and tested by many people. However, someone said that they will stick to white rice because they are used to it. Few people said that they can alternate the yellow with white rice until they become used to it and later on they can replace the white with yellow rice. Everybody seemed interested and they even asked for a sample.

When we showed the picture of Golden rice, one commented "It looks delicious in the picture". Other persons looked closely at the picture and they showed curiosity.

Since everyone have not heard and seen the Golden rice, they remained curious and we generated no violent reaction. Even on the GM topic, almost all farmers were not familiar. One farmer said that he read about GM in newspaper but it was not fully explained in details. He just heard that is like Bt corn. On the other hand, two farmers remembered that they have heard the name Golden rice and GM issue in Batangas but they did not disclose any details of what they heard, they confirmed that information sources were not that reliable and information was just part of rumors. But still they want to try GR if it will be endorsed by government. While the moderator reads the explanation about Golden rice, they are leaning towards him while some are focused in looking at the picture. They chat and murmured with each other about RC 82, illustrating that they have heard/familiar with that variety. For some farmers, they felt better when they heard that DOH approval is needed before the release of GR. They are bit hesitant if the parent plant came from another country; they asked if it is suitable to grow here.

After the explanation about GR, they are still willing to try the product as long as they would see the results to other people, certified by DOH, approved by government for consumption. But some respondents that were really interested and willing to taste it because they know that it has vitamin A already, it has natural color, it has vitamins not present on ordinary rice and good for health. Someone also commented that even if you eat this rice alone, it has already vitamins which benefit their health. One person even told that "to taste is to believe". Someone said that there is lack of information about BT corn, but a lot of farmers are against it, maybe information must be disseminated properly that GM is alright.

Before eating GR, they want to know the advantage and disadvantages of GR to health, aroma, taste, soft, slippery, after effect, if it prolongs life for adults, is it ok for persons with hypertension, process of cooking. They even suggested that upon release of this rice, a cooking demo must be conducted in their area and let the person who cooks it be the first one to taste it in front of them so they will see if he will be poisoned or not. They also want to invite someone to explain thoroughly about GR. Testimonials from neighbors and other people are also important for them to try this rice.

We received positive feedbacks to all farmers, especially men because they look so interested about the product. They even thought that we will be distributing the seeds after the FGD. They want to plant the GR given that it is suitable to soil, gives high yield, resistant

to pests (golden snail) and diseases (tungro), adaptability to climate and soil, suitable to flooding, geographical, fertilizer requirements (if uses more fertilizer) because it is costly for them and months of harvest. They are more particular with the marketability of the GR and its appeal to consumers. One person said that they planted pink rice in their area, everything was good except its appeal to the market, and they were not able to sell those because wholesalers do not want them. They also suggested that PhilRice should coordinate with DA of municipal to implement this project. This implies that they really trusted the technicians from municipal when it comes to seed choices.

## **Commercial Farming Households**

### **A. On Rice Farming**

For commercial farmers, almost all of them gave the same reasons why they farm. Nothing unusual was gathered for some of the questions. They farm to earn money and farming is their source of income. This is also where they get money to pay for their children's education. Some mentioned that since most of them were not able to finish their studies, then the only thing they can hand down to their children is a decent education. Rice farming is also their source of food; this is where they get their rice for their own consumption. A lot of them borrow money to finance their farming; this is where they get money to pay for their debt.

Again, for the problems, we see a lot of problems over and over again. We see financial problems, in which they have difficulty with capital to start up a season. We also see pests, tungro, rats, golden kuhol, and insects as a constant issue. For this area, another problem is natural calamities caused by typhoons and constant rains. Mayon volcano has also been a problem because it causes the soil to have different consistency continuously. The cost of fertilizer has been consistently coming out. From last year's price, prices are close to double already. Theft is also a problem here. Thieves harvest the rice at night and since they do not have enough security in the areas, they cannot do anything about it.

There have also been complains made by some barangays where wholesalers control the price. They were telling us that the government should have some form of regulation on this because these wholesalers can bring down prices and the farmers suffer with the low price these wholesalers offer during the harvest season.

Most of the commercial farmers use RC18 because it can be used both during summer and the rainy season. Since most farmers use the same plant 2-3 times before they change, RC18 suits them most. There are others who also use 144, 72, 56, 138 and

146. In two barangays, they also mentioned using 10, 80 and 82 for the rainy season because of its resistance to flooding and wind. In the area, farmers still prefer certified seeds because they can use the plant for the next harvest season, unlike hybrid where they say they have to replant, which requires more labor and more fertilizer (more capital). With hybrid they have to prepare the land, meaning they have to use fertilizer even before planting.

Most of the farmers are willing to try a new variety of rice, but before they try the new variety, they want to know if the yield is higher for this new variety, they want to hear testimonials that this is better, that the rice is better/good, that DA has recommended it for use in the area and they also want to see the seeds first before they start planting. The barangays get their information most of the time from technicians from municipal. There is only 1 barangay who

was visited by Philrice and they do not often visit the area, this is in comparison to municipal technicians who come often to check the certified seeds they recommended. Most farmers also share information among themselves. They say they compare problems and outcomes. Their experiences also count a lot when they make decision on the seeds they grow. In one of the barangays, they even have an irrigator's association where the most experienced farmers share their thoughts and experiences to less experienced farmers. There are also a few distributors of pesticides and fertilizers who visit and tell them what about new varieties and if these will be good for their type of soil, but most of the time, DA is the more effective body who gives this information. In almost all instances, men decide what type of seeds to plant.

Seed sharing is often done in the area, as well as saving the good seeds from their last harvest. They prefer using certified seeds as mentioned previously. For this season, they used the seeds subsidized by DA. They also said that DA only provided the seeds because of the rice crisis, but if there are no problems with rice supply, DA no longer does this. There was also a problem that came out when we mentioned the seeds provided by DA, some were hesitant to use it because it might be prone to Tungro and they prefer the good seeds they have.

Corn is seldom grown in the areas; this is mostly grown in upland, because there is less water/irrigation. In the 3 barangays, they have sufficient irrigation and the rice fields are often watery. Corn also takes a longer time to harvest so this is a less preferred crop. When they were asked about Bt Corn, unanimously, they had no idea what this was. Blank and clueless faces were seen all over the barangay halls. Some were also asking if this was yellow corn, Japanese corn or the hybrid variety. Since they did not have an idea, we did not pursue questioning.

An average of 20% to 50% was answered when they were asked how much rice harvest is left for their families. A majority of them say that a large portion of their earning or harvests are used to pay for debt, since they do not have enough capital to start on their own. 1 barangay even mentioned that they sell most if not all of their rice harvest so they can buy cheaper rice, like NFA, which will allow them to buy more rice. This is due to the better quality of rice they have and consequently the higher market value of their harvests.

## **B. On Rice/Food choices**

In terms of the respondents' consideration of food for their children, they want to have their children have nutritious and delicious food. They also want to have more food intake for them to feel full more often. When the topics were asked regarding food choices for the family, the men were generally silent and they seemed to care less on the topic. We had to push them to answer some questions. Children also needed to be given appetizing food for them to eat right. Vegetables were a consistent requirement for parents. Due to budget constraints, parents had a hard time buying these requirements even though they wanted to feed their children the right food. Some residents in 1 barangay also mentioned that what children want to eat, they provide because this will persuade them to eat more.

For adults, they prefer good and healthy food. We also observed that women are more health conscious than men; they watch out what they eat more than men do. At the age of 45 and up, people watch out for hypertension, arthritis and diabetes because these are common

illness for this stage in their lives. They also eat less meat and fatty food to avoid the illnesses mentioned. They only eat a lot of meat when there is a fiesta in the neighboring barangays or in their area. One lady also mentioned she ate oatmeal at night because her doctor prescribed this for her to lower her cholesterol level.

For the amount of rice for a family, the amount depends on the size of the family; it usually takes 3 kilos to feed a family of 5 to 10. Those families with less than 5 members, a kilo of rice are enough. When they were asked who ate more in the family, teenage men ate more because they have to work and some are also in their growing stage which makes them eat more than they normally do. Adult men also ate more than their children because they have to work during the day and they needed the energy. Most families also cooked rice 3 times a day that would be for breakfast, lunch and dinner. But if there is no school, some would only cook rice twice because the kids only ate bread in the morning. Aside from this, mother's prepared rice in the morning for their children to bring packed lunch. Others also disagreed with bread as a substitute for rice because bread is not that filling as rice. They get hungry faster when they do not eat rice in the morning.

When asked what rice they preferred, they mostly answered tasty rice, white rice, rice that was fragrant, round, well-milled and rice that is soft. They would prefer to have good rice rather than have a good viand. Some also said they prefer their own harvest because they know what type of rice they were eating. Not like the commercial rice they can buy in the market, wherein they are not sure what type it is. NFA rice did not have good feedback from the respondents because they say that they received rice that was stocked long ago and it already tasted different.

Women decide who buys rice and food because she goes to the market and cooks the food. The men go home and eat and they say they do not have time to do this stuff, except for a few times when they go to the market and do these things. Women do the budgeting as well.

For new food, most of the respondents said they were willing to try new food. Their faces looked positive and genuinely willing to try new food, but before they wanted to try, they want to know if this has been approved by DOH and BFAD, if it is suitable for human consumption, that it tastes good and is nutritious for them. They also mentioned they might be able to save on this new product or simply better than what they are using now.

There were a few people who tasted colored rice. What mostly came out was red and brown rice, which they say is not readily available in the market and is expensive. Only a few sell this and most farmers who grow this, have this for their own consumption only. This type of rice is good and healthy. Some also mentioned they have seen black (maragadan) rice which was only used for local desserts (rice cakes).

When asked what color of rice they prefer, majority still wanted white rice. They gave the reason that they were already used to white rice and this tasted better for them. They have eaten this for the longest time and this is what they prefer. One person also mentioned that red/brown rice was not presentable to visitors. When his guests see red rice, they will be surprised and might not eat what he has prepared due to the color of the rice. But if these farmers got used to red rice, then it will be ok for them to use red rice on a regular basis, but with the condition that the rice will taste as good or better.

### **C. Knowledge and Attitudes on Diet and Nutrition**

A healthy diet should include fruits and vegetables. It should have no insecticides and should be fresh. Some examples of vegetables that are healthy were also given, some of which are bitter melon, malunggay and root crops. For a few men, they mentioned soup number 5 and bulalo as healthy because it made them stronger. Some say meat is healthy and some say it is not. For food that is not healthy, the constant items that were mentioned are junk food, hotdogs and canned goods.

Farmers say that as long as food on the table includes vegetables, then they are eating a healthy diet. For children, they always mention that kids should eat regularly, that they grow healthy, for them not to get sick, kids stay strong and active and be hygienic as often as possible and that they eat fish and vegetables. These are the general concerns of the parents. There were also a few who mentioned that the children eat whatever is on the table because this is what they have. For adults, they want to prolong their lives and they should eat more vegetables, but these all depend on their budgets. If they do not have enough money, food for children and adults will be the same. For pregnant women, they should have regular check-ups or a pre-natal check. Pregnant women should also avoid soda, should have less stress, eat less meat, eat the right food and also avoid coffee.

There were several medical services mentioned, most of which were conducted by DOH. They mentioned immunization in the barangay health center, free check-ups, resident midwives in the barangay, de-worming, Patak Pinoy, free circumcision, weighing programs, feeding programs, free vitamins and medicine and each barangay has a couple of Barangay Health Workers (BHW) who are assigned specific zones per barangay. They often use the programs but these also depend when the schedules are given, they mostly go to these programs when there are free check-ups provided or free immunization programs. Based on our observation, older people go more often to the center because they are more health conscious and monitor their problems on a regular basis.

They are also familiar with nutrition and other health programs by the government and others. There are orientations given to mothers and pregnant women about nutrition (these are mostly government projects). For each barangay, they have different experiences. For one, they said that Bicol University provides health seminars to the people in their barangay, but this has not happened in the recent years. Food and Nutrition Research Institute (FNRI) also stayed in one barangay for a week to do a research on food behavior and they also provided medical check-ups to them. These projects were very helpful to the barangay and they welcome these projects. These programs helped lessen the health problems in their barangay. Since they do not have much money to go to the doctors regularly, these programs have provided so much help to them.

### **D. Information Sources**

Most of the respondents get their information on food and nutrition from BHW, other government agencies and the barangay health center because these are free. Most also mentioned they get information from TV, radio and testimonials from other people.

One of the most effective ads that were mentioned was the Knorr ad "Makulay ang Buhay." This was very effective to children because they made children believe that vegetables are

healthy for them. Due to this ad, children ate more vegetables. Not to mention that the children danced to this when they heard it on TV or the radio. Parents mentioned that what the ad provided was the truth that is why they liked the ad. Some members of one barangay also mentioned that if their idol endorsed the product, there is more recall of the product and is a bit more believable (they mentioned Sharon Cuneta as an example). Some other products that they remember were Lactum, Magic Sarap and Lucky Me. The best source of information on health for most respondents is the doctor. They are better than celebrities because these celebrities only get paid to do these commercials. Others also mentioned TV, radio and testimonials from people they know. They also believe that they themselves are the best source of information because they get actual experience of the product

#### **E. On Vitamin A Deficiency**

Most of the people do not have an idea what VAD is. We estimate that 90% of them had no idea what it is. Men also are less participative and interested on the topic. Only a few in the groups answered what they know about vitamin A. The answers we got were mostly that they have poor eye sight and these are people who are malnourished.

The foods that are rich in Vitamin A are squash, malunggay, carrots, milk, banana, root crops. Most of the people were also guessing when this was asked. They kept on mentioning fruits and vegetables that are obviously healthy. Most of them mentioned that they eat these almost every day because they almost always have vegetables on the table. They also have gardens at the back of their houses or they just harvest what they have in their farms. One barangay mentioned that they eat these vegetables at least 2 to 3 times a week. The reason why they are not able to eat these is because children prefer meat and chicken and also it makes them sick to see vegetables on the table all the time. Another reason why these are not eaten is because carrots are expensive and budget is again a problem. One also mentioned that squash looks like a feces that is why kids do not like eating it or seeing it on the table.

All three barangays have experienced the Patak Pinoy program and these have been running for an estimated 10 years. They say that their kids no longer get sick often and they avoid VAD among their kids.

#### **F. On Golden Rice**

No one was familiar with yellow grain rice. They also associated GR with NFA iron infused rice, which had mixed comments. Some said the rice was ok, but some also mentioned the taste was different. Almost all also said they are willing to try this yellow colored rice. Some said that they want it especially if it's free; they are more inclined to try it. They simply wanted to try it because of its new color. Some also mentioned they did not want yellow rice, why should he try yellow rice if there is white rice available. If there is no other choice, there is no other choice but to use yellow rice.

When they were asked if this yellow rice had VA, we got a better and more positive response. Some said that they were not picky with white rice. Some also said as long as a reliable person said it was better, they will try it. They also wanted that DOH certify the product that it is good for their children. They also wanted to make sure it had no bad effect to them or has no poison. The product should also be proven that it contains VA and is effective to humans.



They also would want a doctor or a reputable person to state the good and bad effects of the product.

They are willing to replace white rice with this yellow colored rice because they say this is better due to the VA infused in it, but they want to make sure it's not poisonous. One person also mentioned he is not willing to replace white rice because he got used to white rice already. Another person also mentioned he is willing to eat this alternately with white rice especially if it's cheaper.

When the picture of GR was shown, people were looking at the picture closely and were interested with the product. A lot of people were also saying that the rice on the picture looked good and they wanted to have a taste of it.

The respondents did not have an idea what GR is and they have not heard of it. One asked a question where this was planted because this might have golden snail with it.

People were not familiar with GM for all three groups. When the text was read, people were listening closely to what we have to say and they were also very curious. Some were also asking for samples already.

After reading the GM explanation, they were still willing to taste the product. They will eat GR if it has been approved by the government. They will still eat it because it has vitamins, looks attractive and is healthy already. Some also asked what country this came from. Some also realized that GR will be cheaper because they will not have to buy vitamins anymore. They wanted to know how to cook the rice, its price when released, place of origin, if it tastes better. One also mentioned that they will use more toothpaste because of its color and people might think they have hepatitis.

The government should provide information on the product for it to be believable to them. They want to know the advantage and disadvantage of GR, its taste, if it's soft, if it rises more, if it lasts longer, if it has a good aroma and if it hardens faster.

All of the farmers agreed that they are willing to plant GR. They want to know if this type of rice will be marketable and can be sold easily like white rice. They also want to know if this has a higher yield, the planting process, if it is susceptible to diseases and resistant to flood, if it is cheaper, if it is sensitive to diseases and also its consumption on fertilizer.

## **Iloilo Province**

### **Non-farming Households**

#### **A. On rice/food choices**

For consumers, the common considerations for food choices for their children are nutrition (good for mind and body), affordability, and quality. Others comment also on meeting their child's preference with food and selecting food that are tasty. Others are concerned if the food can satisfy the hunger of their children and if it can easily make their children feel full.

Other comments related to health and nutrition are:

- ☐ What is important is that there is food. Its nutritional content just follows.
- ☐ We will have whatever is present or available.
- ☐ Fruits are rich source of vitamins and prevents children to be infected with illness
- ☐ Our children usually like fried foods. They don't really like foods with sabaw (soup). But the kind of fried foods that should be prepared should also be nutritious.
- ☐ Rice is good because it contains carbohydrates and it easily satisfies hunger.

However, their choices are limited by their household budgets. Most of the time, they do not have enough money to buy expensive nutritious foods; they would resort to cheaper alternatives like serving laswa and tinola (stewed vegetables) to their children.

For adults, the common considerations for their health are safety (adults experience more illnesses like high blood and arthritis; it is also recommended for them to avoid eating foods with pork, beans and monggo), nutrition (same food is prepared for the entire household, and vegetables is a common answer), and affordability. Most adults mention that they avoid eating leafy vegetables in the evening mainly because they could not digest these (they usually eat lugaw or porridge).

Other comments related to health and nutrition are as follows:

- ☐ Because rice is the Filipino's staple food, adults are satisfied even if it is paired with any dish. Sometimes, when they run out of money, they eat only rice. Still, they find it satisfying when eaten hot. Also, parents would usually prioritize their children than their own personal needs, even in the food that they eat.
- ☐ Adults usually eat laswa because it is nutritious; it makes the body strong and is safe even for other members of the household who are have common illnesses such as arthritis and high blood pressure.

The amount of rice eaten depends on the size of the household or number of family members and the ratio of women and men. Usually, adults will eat what is left by their children. Men eat more than women, but children eat more than elderly. On a per meal basis, the quantity of rice eaten would depend on the dish/viand partnered with the rice. On the average, children ages above 12 years eat more than children ages below 12 years old, followed by adults,

then elderly. On the average, one household member can consume 1/3 kilo a day. The following are specific answers of actual consumption:

- ☐ More than 1 kilo for a household of 5 members
- ☐ 1 kilo for a household of 3
- ☐ 2 and ¼ kilos for a household of 10
- ☐ 3 kilos for a household 5
- ☐ 5 kilos for one week for a household of 2
- ☐ 2 kilos for a household of 5
- ☐ 2 kilos for a household of 6
- ☐ 2 kilos for a household of 8

When asked how many times a day they cook rice, their general answer is thrice a day because they prefer to eat rice that is newly cooked since it is hot, supple, aromatic, and appetite inducing. Some, however, would cook only twice a day. Reasons for cooking rice twice day are as follows:

- ☐ Whenever they are busy
- ☐ If they have eaten their breakfast at a later time (e.g. at 10 AM).
- ☐ To save effort
- ☐ Some members of the household eat outside during lunch
- ☐ Whenever children have classes

The topmost varieties preferred by consumers are IR64 and RC82 because these are supple and good smelling. Other preferred varieties are 144, 110, and Sinandomeng. They like these because these stay soft even if left uneaten for some time. The following are specific characteristics favorable to consumers in terms of rice:

1. Soft to eat (white in color only follows after this)
2. Aromatic; smells good
3. Good quality

Mostly, the husbands decide on the type of rice to purchase for the family since they are the ones always outside the house. This is practical because this saves money and effort and their wives need not go to the market to buy rice. If they have money, they would also buy in high volume.

One participant said that his family does not like NFA rice because its smell which they claim is not advisable for people with asthma. They perceive that this type of rice is laced with pesticides, which can cause indigestion and illness. Their claims are based on experience and gossip from those that have experienced it. Also, some respondents are even willing to loan just to be able to buy good quality rice.

When asked which variety they prefer, RC64 or 82, majority answered RC64 because it is softer than 82, even when eaten cold. However, most commented that RC64 was not around anymore; if it was, they would prefer buying this variety. Some mention that there is no difference between the two, as they are both soft varieties.

However, for food in general, the mothers decide since most of them handle the budget for food and other needs. The family also gives strong regard on the ability of the mother in choosing quality food for their consumption. Nevertheless, there are a few families who really take time to talk and plan about what to eat. The suggestions of other family members also matter (e.g. children's preference or requests).

All participants said that they willing to try new foods for their family as long as the food is safe (no harmful ingredients/chemicals), it is healthy or nutritious, it contains vitamins, it is affordable and fits the budget, and it is palatable or delicious.

As observed, consumers get a little sceptical when it comes to the safety of the food that they eat. One consumer even cited the issue on "sugar-coatings" done during the introductory/promotional phase of a product, wherein people were made to believe its "safety claims." Later on, he said, they still end up hearing about studies that reveal the products' harmful effects to the body.

In general, color is not an issue for adults. On the other hand, children prefer to eat white rice since they are used to it. Most of the participants are familiar with red and brown-colored rice. Others are even familiar with black rice. For them, white rice has a pleasant and acceptable taste. Adults consider colored rice as "nutritious rice," but they do not find this attractive. If a new color will be introduced (e.g. "rainbow" color, green, or blue), it would be new to the locals. Because it is still very new, they would tend not to buy it because they do not know what kind of rice it is, what its effects are, and where it came from. One consumer expressed his concern with the rampant manipulation of "bad quality" rice like NFA. He shared to us that "overstocked" NFA rice was being re-milled to make it whiter. He was worried that colored rice probably might have undergone the same process. Majority of them have already tried red-, brown-, and black-colored rice since these are locally grown. They have not tried any other color other than those mentioned.

Some of the common experiences, reactions and comments regarding colored rice are as follows:

- ☐ It is dry and not good to eat.
- ☐ The brown rice tastes bland. But when it gets cold, it's nice to eat especially when partnered with vegetables. But it is not nice to partner brown rice with other dishes.
- ☐ Depending on the variety, brown rice also tastes good. But if you buy it from groceries, generally, the quality is bad. On the other hand, if you buy direct from farmers and if it is newly harvested, it is really good.
- ☐ Brown rice is like tiki-tiki (a local brand of children's multivitamin syrup), with multivitamins.
- ☐ They prefer colored rice of kamuros variety (a local mountain variety). However, it is more expensive than white rice.

- ☐ They also like a RC64 variety for colored rice.
- ☐ Colored rice has a psychological effect on the children. For instance, they do not like brown-colored rice. Also, they are shy when they have it as their baon (packed lunch) for school, with a mother mentioning that classmates would tease their children if their rice is not white.
- ☐ Majority finds it difficult to convince their children to try colored rice. They suggested that if a colored variety of rice will be promoted, it is advisable to introduce it through fast food chains like Jollibee or McDonald's or through TV advertisements. This would make them curious and eager to try it.

White-colored rice is most preferred since people are used to it and is also more appetizing especially to the children. Also, their children prefer white rice because this is what they are used to. One consumer said that she likes brown rice more than white rice because it is more nutritious. Another reason why white rice is mostly preferred is because white rice is always available in the market, unlike colored rice. If colored rice was as abundant in the market, they claimed that they would be willing to buy it. Also, it depends on the price. When asked how they can convince their children to eat colored rice, one participant said that they can buy in bulk so that their children have no other choice but to eat colored rice. They mention that they will eventually get used to it.

## **B. On Knowledge and Attitudes on Diet and Nutrition**

Participants are knowledgeable of what a healthy diet should be. Vegetables like malunggay (horse radish), tugabang, kangkong or water spinach, and alugbati are common answers for food that are nutritious, which are all leafy vegetables. Squash, eggplant, and gabi (taro) were also mentioned. Most of the time, they would mention about cooking laswa (stewed vegetables), a Visayan meal of mixed vegetables such as squash, string beans, eggplant, and malunggay. It is a complete serving of most of the vegetables they can readily get from their backyards. Of all the vegetables, malunggay for them was the most nutritious. Majority of them eat vegetables in an average of three to four times a week. They said that vegetables are easy to find and prepare and serve as a cheaper source of vitamins. Most of them have learned to distinguish healthy from non-healthy foods based on what they learned in school before and what those older than them tell them.

Aside from vegetables, participants mention fruits like bananas, which are very common and which are high in potassium. Also, rice was mentioned, because it gives energy. One consumer also cited that rice has a certain content that can help develop the brain well. She also mentioned something she heard before saying that rice is the reason why Asians have better brain development; however, she does not remember where she heard this. Included in their list are fish and meat because they are high in proteins.

For examples of unhealthy food, they cited the following:

- ☐ Junk foods or tsitsiryas
- ☐ Canned foods
- ☐ Foods with preservatives (hotdog is the most mentioned)

- ☐ Noodles
- ☐ Processed foods like hotdog and tocino (pork preserved with sugar and red coloring)
- ☐ Most of the children like eating the food listed above. However, most of the parents do not allow their children to eat them frequently. Others just think of ways to enhance these foods, like adding malunggay leaves in noodles.

Majority of the consumers are more concerned of the food that their family eats; they look into its nutritional value, its safety, and affordability. The three top concerns on their children's health are:

1. Food safety (does not contain harmful chemicals or ingredients)
2. Nutrition
3. Good grooming and sanitation

For adults, the following are their concerns:

1. Food safety (proper observance of food restrictions, especially for adults with diseases like diabetes, hypertension or high-blood pressure, and arthritis)
2. Nutrition
3. Regular exercise and healthy lifestyle

For pregnant women, the following are their health concerns:

- ☐ Avoidance of foods that could harm both the woman and the baby; eating foods that are nutritious like vegetables and fruits, etc.
- ☐ Regular Pre-natal check-up (once a month)
- ☐ Regular exercise
- ☐ Proper vitamin intake

Medical services provided by the barangay health center like free immunization for children and pregnant women (e.g., DPT, BCG, Tetanus toxoid), feeding programs in school, deworming, Patak Pinoy program, and the "Botika ng Barangay." Most of the programs are done per local community with a specific schedule. Medical and dental services provided during missions by private sectors, by the army, and other organizations are done twice a year. For example, free circumcision and other services are provided by soldiers at least once a year.

Majority of them are somehow thankful of these services, but they have noticed a lot of irregularities and loopholes in these programs. They have noted poor quality and implementation of such projects in their area. Also, they comment that the services are lacking. In one group, the discussion became political, with them mentioning that other medical services that are supposed to be given for free are now being charged. Services are also being affected by political conflicts.

Respondents avail of these services once a year. Most of them are only prompted to have check-ups and consultations the moment they feel that something is wrong. Also, they are being visited in their place by various sectors that offer other health services. In reality, majority of the respondents said that the medical services by the government are not free and they are annoyed by this.

Other nutrition and health programs by government and non-government organizations are:

- ☐ Patak programs such as Vitamin A
- ☐ Optical missions by a foreign religious group of doctors
- ☐ Medical missions by armies, private doctors, and private organizations
- ☐ Immunization and vaccination (BCG vaccine, measles, hepatitis, and polio)
- ☐ Anti-filariasis campaign
- ☐ Feeding programs (e.g. development of a backyard gardens for each family, provision of food in schools)

Other programs that they say indirectly contribute to improvement to health are:

- ☐ Dispersion of vegetable seedlings from Department of Agriculture
- ☐ Dispersion of tilapia fingerlings by Department Agriculture and Bureau of Fisheries and Aquatic Resources
- ☐ Swine dispersion

Most of them are participating in these programs and appreciate them because the services are provided for free. However, majority are aware of the loopholes in the system. They are not satisfied with the way the budget for health is being manipulated and redirected to different people. For instance, one participant complained that the medicines that are provided for free have only a month before it totally expires. Also, they also want more medical programs for adults since currently, majority of the programs are for the children.

### **C. Information Sources**

Participants in this group make use of televisions and radios more than the farmers. When asked what their sources of information are, the following were answered:

- ☐ Television (Salamat Doc, ABS-CBN's Lusog Busog program)
- ☐ AM Radio (Bombo Radyo)
- ☐ Schools
- ☐ Newspapers
- ☐ Private Sector (since information dissemination in their area is poor if they will just depend on the church, school and government institutions)
- ☐ Neighbors

However, despite this, they prefer that information dissemination should be done personally by a person of authority (e.g., nutritionist, doctors, agriculturist), and it should be set like a seminar or meeting, where they can freely ask questions, which they will not be able to do when they just listen to the radio or watch television. However, the television was their next choice after personal contact. Most of them also agreed with the use of the native language when endorsing and introducing a product for better understanding, with the consideration of those people in the lower classes.

Majority of them are familiar with advertisements and promotional campaigns regarding diet and nutrition. The most popular are the following:

- ☐ Jollibee and McDonald's
- ☐ Knorr (Makulay ang Buhay theme song)
- ☐ Enervon Prime
- ☐ Maggie Magic Sarap with Ai-Ai and Kris

When asked what made them recall these advertisements, the following are their answers:

- ☐ Because they are frequently shown on TV (repetition).
- ☐ There's something comical about them

Some of the consumers stated that they do not really believe everything that was said in the commercial, just because it was being endorsed by a celebrity, mentioning that they are not credible because they are being paid to do it. They will only believe the advertisements after they have tried the actual product.

Consumers will most likely believe an advertisement if the endorser/promoter of the product is somebody from the medical field like a doctor or a nutritionist and even people from the rural health unit. They said that these are the type of people that have studied it well and thus will be giving more accurate information.

#### **D. On Vitamin A Deficiency**

They are vaguely familiar with Vitamin A deficiency and the symptoms related to this. It took them a long time to answer questions related to this. The most common answer is poor eyesight and loss of vision. They said that they do not really know about it, unless somebody from the family has it. Also, they do not know how to diagnose and treat this.

Respondents are vaguely familiar with food rich in vitamin A. Most respondents were just naming common vegetables. The most common of their answers are the following:

- ☐ Squash
- ☐ Malunggay (horse radish)
- ☐ Ampalaya (bitter gourd)
- ☐ Kangkong (water spinach)
- ☐ Carrots



- ☐ Papaya
- ☐ Anything yellow

All answered “yes” when asked if they eat these foods. However, they only eat these foods if they are in season or available in the market. Sometimes, they cannot eat these foods when they do not have time to prepare them and when they have been eating the same vegetables for a long time. Other specific answers are:

- ☐ Once or twice a week
- ☐ Once a week at a minimum
- ☐ 4–5 times a week

Common vegetables planted in their backyards are malunggay, alugbati, and eggplant. However, they would usually buy squash for P5 in the market. Generally, they would get these vegetables from their garden.

Majority is familiar with the nature of the Vitamin A Patak Pinoy Program but not with the name. They are appreciative of the program since it is given for free, but they said that the supplies are not enough for everyone. They mention that it would be better if even adults could also participate in this program. They are also not familiar with other programs by the government and other institutions.

## **E. On Golden Rice**

All are not familiar with yellow rice. The only yellow-colored rice that they are familiar with is Arroz Valenciana (a local paella-like dish usually served on special occasions), and most are familiar with red and brown varieties of rice only. However, almost everybody is interested to know more about it.

All are interested in trying out yellow rice despite the lack of information, in order for them to know how it tastes. A participant comments that in hard times like this, people do not usually care what the color of the rice is, as long as they can eat. Another commented that Filipinos are really fond of trying new products.

Majority was still willing to try out Golden Rice even after being told that it contains vitamin A. Despite the knowledge of the vitamin A content; however, some were hesitant about it. One even said that the rice should first undergo trial testing for at least three months before releasing it to the market to prove its safety.

The most reliable person for them is anybody who is credible from the healthcare and medical field such as Department of Health and agriculturists from Department of Agriculture. At the local level, they consider the health officer and municipal doctor as reliable persons. When asked who they consider reliable to endorse Golden Rice, majority answered the Department of Agriculture and Department of Health.

Majority is willing to replace white rice with price as the topmost consideration. Other considerations are nutrition, safety, taste and quality. Specific comments are:

- ☐ There are cases when the doctor would advise you to avoid colored foods, because they would monitor your urine
- ☐ They will try if Golden Rice has the same taste and has more nutritional content
- ☐ If it is more affordable and more delicious
- ☐ If the price per kilo is higher by P1, majority find it more expensive. They are only willing to pay a P0.50 premium for the Vitamin A content
- ☐ Yes, because we need not buy Vitamin A supplement (this helped them connect to a previous answer of only children being given vitamin A supplements)
- ☐ Yes, if our children will like it.

Almost all have not heard of Golden Rice. When the picture of Golden Rice was shown, all were listening and looking at the picture intently. All appeared to be really interested. After a silent pause, small discussions started emerging from the participants.

Most of them are not familiar with genetically modified organisms other than employees of Department of Agriculture. This shows that there has been no influence of any anti-

GMO non-government organization in the area. Specific comments from employees of Department of Agriculture are as follows:

- ☐ They heard that Bt corn contain harmful chemicals from the radio, Church, and other credible people (not just politicians).
- ☐ Also, since Bt corn is a major raw material of livestock feeds, they comment that its harmful chemicals are being transmitted to animals then humans. They mention that they could not tell the effects of Bt corn from livestock because these do not live long enough to manifest any effect.

Majority is still interested in trying Golden Rice despite it being a GM crop primarily because of its vitamin A content; also, it has the same price with other rice varieties and can help the consumers lessen their expenses in buying vitamin supplements. However, one of the groups was still a little hesitant on its safety as a GM crop, probably because of the lack of information given to them about Bt corn. Most participants would trust buying and eating rice that was locally produced than importing rice from other areas. They trust that the local farmers do not use a lot of chemicals in their farms; hence they trust the safety of their own produce.

Before trying Golden Rice, generally, participants want to know the following:

- ☐ Does it have any bad effect on the body?
- ☐ Is it really resistant to pests?
- ☐ How does it smell?
- ☐ Where did it originate?
- ☐ How about with the chemical/s being used? Is it also the same with the one we used with the others?

For the Department of Agriculture employees, the following were their concerns:

- ☐ We want to see the results first from the laboratory before we will be convinced.
- ☐ Is being a GMO the reason why the Golden Rice is colored yellow?
- ☐ Is it safe if placed together with other rice varieties?
- ☐ Why is it that in all of the vitamins, you focused on Vitamin A?
- ☐ Does it have any chance of mutating in the future? Will it darken?
- ☐ In growing Golden Rice, is it safe to place it together with other rice varieties and other crops? As what was mentioned, we want to know if it's really resistant (to pests), because we're concern that it would affect its adjacent varieties. We also want to protect the native varieties that we have here.
- ☐ You have already mentioned about the advantages. Now we want to know the bad effects. Maybe it's not good for those who have asthma, or for those who have arthritis.
- ☐ Does the Golden Rice need irrigation? (Some farmers are on the upland areas)
- ☐ How many cropping/s can we use the seeds? Would it still have the same color and content after being replanted?
- ☐ Maybe if Golden Rice is not eaten for a longer time, its vitamin A will decrease.
- ☐ What is the percentage of germination? (The average for rice is 60–70%)
- ☐ Sometimes after being processed in the thresher, the seeds will be damaged. We want to know if Golden Rice seeds are fragile when threshed. If they aren't, then we won't be able to use it for the next cropping.
- ☐ Here in Calinog, it is better if the Golden Rice seeds that will be given or distributed are not RC10 since it is hard when eaten. Maybe it is better to develop RC82 instead.
- ☐ We want a detailed and simpler explanation how Golden Rice was developed.

## **Commercial and Subsistence Farmers**

### **A. On rice farming**

The most common reasons for going into the farming livelihood as given by all types of farmers are as follows:

- Consumption/food
- Children's education
- Source of family income
- Only job that the participants know
- Payment for financing

Of these, the following are the top three reasons: consumption, children's education, family income. Farmers use the proceeds from rice production for education, for food, and for other expenses in the house. Depending on their financial needs, they would first allocate the yield from harvest for consumption. However, if they have to pay out loans incurred for farming and for their children's education, they sometimes sell all of their harvests, and it is still not enough.

The topmost problem is financials or not having enough money to pay for expenses such as the increasing prices of fertilizer, seeds, and chemicals. Majority of the farmers said that the proceeds from the harvest are not enough to cover farming expenses. In relation to this, participants also complain of the low selling price of the harvested rice grains. The selling price is cheap, but the farmers spend a lot for it; they mentioning that this is a major source of their problem with the financials.

Another problem is weather since all their farms are rain fed due to the absence of a concrete irrigation system. Even for commercial farmers, it would cost more for them to pump water for irrigation, costing them already P700 per hectare in fuel for the pump. On the contrary, too much rain could flood the rice field, also resulting to huge losses. There are also cases when the weather changes erratically, causing poor yield that cannot compensate the costs associated with growing the rice.

Another major problem is pests. This does not only require farmers to use insecticides and other chemicals, but also results to huge losses if not cured or addressed early.

Other problems mentioned are lack of equipment, irrigation, and type of seeds used for planting. Almost all of the farmers depend on the rain for irrigation. This results in only two croppings a year and lower yield during the dry season.

In the plains, there is no difference when it comes to rice varieties planted during dry and wet seasons. Instead, the farmers choose a rice variety that can withstand heat. This is to address instances when the weather will suddenly change. The rice variety commonly planted is RC10 because the time to harvest is only 85–90 days and yield is higher compared to other varieties. Also, RC10 has strong resistance against pests and other diseases, and its stalk is hard, so it cannot easily be tilted by the wind. When weighed, they claim that it is heavier than other varieties, thus resulting in more earnings per hectare.

On the other hand, in the uplands, the farmers plant malidho, kutsiyam, and red rice during the dry season. The participants claim that this is more expensive and is "organically" farmed and natural.

Other rice varieties planted are RC82, 134, 188, 110, 148, red 36, and RC64. Currently, there are more than 20 rice varieties. This is important because the farmers cannot use the same seed after 2–3 croppings, as they claim that it would be less resistant to pests/insects.

Before trying out a new variety of rice, for women and men, their answers are similar. The common information they should know are the following:

- ☐ Resistance to insects
- ☐ Production details such as:

- How long is the time to harvest? What is the average yield from harvest?
- When is the appropriate time to plant? Will it withstand heavy rains and long dry seasons?
- Will it grow well?
- Is it heavy when weighed (mapiso)?
- Is the quality of the seeds good?
- Can I sell it for a good price?
- ☐ Taste and suppleness of rice when cooked
- ☐ Recommendation from Department of Agriculture

The common sources of these types of information are from field technicians claimed to be from the Department of Agriculture and the radio. For commercial farmers, they mention that they get their information and updates from PhilRice through text messaging (SMS). They have a website that sends ideas about farming to farmers that have cellphones.

In general, since the husbands are the one managing their farms, they decide what variety to plant. They also decide when the right time is to plant the seeds. In cases when the owners of the land are not involved in farming, their caretakers/laborers decide for them. Also, in cases when the children are the ones involved in farming, they are the ones that decide what variety to plant.

In terms of seeds preferences, the following are the most common:

- Certified seeds from government

These seeds are released by the Department of Agriculture. Currently, the farmers only pay P650 as a result of 50% subsidy from the government. These are commonly planted up to 2–3 croppings. For farmers that are dependent on the certified seeds from the government, the start of the next planting season depends on whether the seeds arrive early and if it rains early (due to lack of irrigation).

- Own saved seeds

Farmers prefer this because they have experience in planting this variety of rice. If the result is good during the previous cropping, they would usually use the same variety of rice for the next cropping. However, the seeds should not be used longer than 3–4 croppings. On the average, it should only be used twice or thrice, with three times as the maximum. For them, if there is enough capital, it is better to change seeds after every other cropping.

- Exchanged seeds from other farmers

Since farmers are required to change seeds after 2–3 croppings, it is a common practice for them to exchange good seeds with one another. The major advantage of this is that it is much cheaper compared to buying certified seeds from the government. However, they comment that the risk is that the yield might be lower since the seeds might have already been infected by viruses, bacteria, and other palay diseases.

In specific local communities, however, some answers regarding seed preferences varied:

- Seeds from seed growers and registered seeds (preferred in Cabagiao)

However, these are more expensive compared to certified seeds that are subsidized by the government.

- Hybrid seeds (preferred in Jamin-ay)

Yield from harvest is high but it is more expensive since more fertilizers are needed. Also, the seeds can only be used once. These seeds can also be planted in the farms that are irrigated. If not, then yield will be low.

The government, through the Department of Agriculture, provides and subsidizes rice seeds for the farmers. Currently, farmers pay only P650 for 1 sack of certified seeds. In times of calamities, like typhoon Frank, free seeds were given by the government. However, the supply was not enough for planting, and most of the farmers were not able to avail it.

Representatives from the Department of Agriculture also conduct classes on integrated pest management and best rice crop management practices (through the Palay Check cluster classes). The Palay Check cluster classes last for 18 weeks, and it also includes demonstrations on land preparation, seeds selection, nutrients management, and others.

There is also a consensus that they will try the seeds provided by the government for free as long as it is of good quality. In addition, the farmers believe that the government will not give them seeds that are poor in quality.

Aside from rice, other common crops grown by the farmers in the area are listed below. When asked why the farmers grow other crops, majority answers that this is for consumption and it serves as another source of income:

Sugarcane (this was the original crop of the area, but when the sugar industry of the Philippines collapsed, they switched to rice; there are still sugar centrals present in the province)

- ☐ Corn
- ☐ Banana
- ☐ Cassava
- ☐ Vegetables
- ☐ Watermelon
- ☐ Sweet potato
- ☐ Monggo
- ☐ Squash
- ☐ Peanuts
- ☐ Eggplant

## □ String beans

Specifically, in the municipality, a few farmers grow corn, and these farmers would usually mix the corn with sugarcane, a farming practice known as inter-cropping. Out of 9 locations, only participants in one barangay (Lonoy) did not grow corn at all.

Majority of the participants were not familiar with Bt corn. Some may have heard of it, but the usually reason for lacking interest in it is because they are more concerned with rice and tend to disregard anything not related to this. Only a few farmers in Cabagiao, Dalid, and Jamin-ay are familiar with Bt corn. When asked what they know about it, there common answers are that it is a hybrid corn and is expensive to grow. Other comments in specific areas are:

- Cabagiao: One sack of BT corn costs P2,300. It is expensive to grow Bt corn because it requires more chemicals to keep it free from diseases. On the contrary, higher yield from production makes up for the cost of chemicals/insecticides.
- Dalid: The corn cob is big and long. It contains pesticides to preserve it. Its production was stopped due to bad side effects to humans, hogs, and livestock.
- Jamin-ay: One farmer knows someone who grows Bt corn which was being sold to Purina. The same farmer also convinced them to grow Bt corn in their area; however, due to lack of space and expensive chemical maintenance, other farmers did not attempt to grow it.

Currently, no one is planting Bt corn anymore. Previously, however, a few commercial farmers planted, and their produce was sold to livestock feed companies in the Philippines. The participants were not familiar why planting of such has stopped. Majority of the farmers will not plant Bt corn because they claim the production cost is high (e.g., expensive chemical maintenance) and they do not have enough space to plant it. Also, many cannot afford the Bt corn seeds. To those who will plant Bt corn, they reasoned that the plentiful harvest yield can compensate for the cost of production.

After they harvest their rice, the percentage allocated for consumption depends on the number of family members and the financial needs of the family. On the average, farmers allocate 20–50% of their production for consumption. Others said that sometimes the harvest is not enough for their own needs since their farm is small. This forced them to sell all of their rice production. On the other hand, if the farm is big, then it is more than enough for consumption. For both commercial and subsistence farmers, in one hectare, the number of sacks harvested range from 60 to 88 sacks depending on the weather. The average yield is 60 sacks. The least/minimum yield is 40 sacks.

For subsistence farmers, after a portion is allocated for consumption, everything else that was left is sold. The farmers use the proceeds to pay out debts (including interests) incurred on fertilizers, chemicals used, crude oil, and others. If the proceeds are still not enough, then they resort to lending. Unless the family has other sources of regular income, proceeds from harvest are not enough to pay out loans and to provide for the needs of the family. For commercial farmers, they have a required percentage offered to the landlord, and the remaining was left for their consumption.

## **B. On Rice/Food Choices**

For food for children, common concerns considered by farming parents are as follows:

☐ Nutrition. However, only 1 out of 9 locations included rice in their comments related to children's nutrition. According to the parents, by eating rice, their children will not only feel full ever after meal, but will also gain weight easily.

Every month, the weights of the children are checked in day care centers to know whether they are malnourished or not.

- ☐ Safety
- ☐ Child's preference
- ☐ Affordability

Other comments related to health and nutrition are:

- ☐ Eating vegetables (common answer)
- ☐ Drinking milk (next common answer)
- ☐ Eating balanced diet, and anything that is nutritious
- ☐ Eating food that will improve body's resistance against illness, and
- ☐ Eating safe food (e.g., foods that will not result to stomach upset)

However, their choices are limited by their household budgets. When asked what comes first between budget and health, majority answered that both are equally important. This is because most of the time, they do not have enough money to buy expensive nutritious foods; they would resort to cheaper alternatives like serving laswa and tinola (both are vegetable soups) for their children. These are ordinary dishes with mixed vegetables as the main ingredient.

Also, majority of them grow vegetables in their backyards. Common vegetables grown in the backyard are eggplant, tomato, patchay, string beans or latoy, papaya, malunggay, tugabang, alugbati, radish and banana. When asked why they grow these in their backyards, common answers are: the vegetables are safe to consume since they are certain that these were not sprayed with insecticides or other chemicals, unlike those sold in the market. Vegetables commonly bought in the market are squash and carrots. Also, the farmers usually raise chicken in their backyards for consumption.

For adults, the common considerations are similar to that for children. In addition, they mention that eating vegetables and drinking milk are the most important. In line with these, other considerations are:

- ☐ Safety (adults experience more illnesses like high blood and arthritis, it is also recommended for them to avoid eating foods with pork, beans, and monggo)



□ Nutrition (same food is prepared for the entire household). Only 1 out of 9 locations included rice in their comments related adult's nutrition. Rice being the Filipino's staple food, adults will be still satisfied even if the rice will be paired with anything. Also, for their consumption purposes, farmers minimize the use of insecticides in their production.

□ Affordability

The amount of rice eaten depends on the size of the household. On the average, an adult can consume up to 1 kilogram a day. Usually, adults will eat what is left by their children. However, adults who are working in the farm or are doing other hard-labor jobs eat more than children. On the average, children ages below 12 years eat less than adults, while children ages 12–18 consume up to 2 kilograms a day. Men eat more than women, and children eat more than elderly. Also, it is not advisable for elderly to eat a lot, especially during the evening. Some mention that the elderly should avoid eating vegetables in the evening as they could not digest this well, which may cause indigestion and stomach problems. Usually, they have poor appetites. The quantity of rice eaten by the family does not depend on the size of harvest. If harvest is not enough for consumption, they would usually borrow from others. On a per meal basis, the quantity of rice eaten would depend on the dish/viand partnered with the rice.

When asked how many times a day they cook rice, their general answer is thrice a day since they prefer to eat rice that is newly cooked because it is hot, supple, and aromatic. Another reason is that they had already allocated the quantity of rice for the day. Others, however, cook rice twice a day whenever they are busy.

If the farmers were given a choice, RC64 and RC82 are common preferences for rice for consumption. As farmers, they consume first whatever is left from their harvest. After they have consumed their stock, their main consideration in buying a variety of rice is budget. Other varieties preferred by farmers are RC64, Red 36, Thailand, and Superwhite. However, usually, whatever they harvest, that is the rice they eat. Farmers prefer rice that is soft, supple or mahumok (top most answer), and good tasting, and rice that swells and expands (maukad/maalsa) when cooked.

Shown below are the three varieties preferred for consumption by farmers and their corresponding characteristics:

□ Red 36 because it is supple and tasty. It expands or swells more when cooked compared to other varieties.

□ Thailand because it has good smell/aroma. Also, the rice grains are larger compared to other varieties.

□ Superwhite because it is soft and savory (the color only follows after).

Usually the wives/mothers decide what type rice the family eats. Their children and husbands would just give suggestions. Even though the mothers/wives decide, the preferences of other members of the household are taken into consideration. There are instances where the children would suggest that they prefer aromatic and supple rice. They do not like RC10 (which is commonly being planted in the area) since its grains are hard or brittle when cold despite its expanding or swelling well when cooked. However, they mention that eating it with

soup helps mask the brittleness of the cold rice. In most discussions, however, children would tend not to choose what type of rice to eat. In terms of menus for daily meals, still, the mother/wives decide since they are the ones who prepare the food. There are times that the fathers/husbands decide what to eat in cases when they are in charge of budgeting.

All participants said that they willing to try new foods for their family, with the following concerns:

- ☐ Is the food safe?
- ☐ Is it healthy and nutritious? (e.g., has high vitamin content)
- ☐ Is the price affordable?
- ☐ Does it taste good?
- ☐ How was it cooked, manufactured or prepared?

When asked who they trust to tell them that the food is safe, they answered the vendors/promoters (they will ask the vendor/promoter if the food is safe) and manufacturers (through food labels/packaging).

Even though the respondents are willing to try new food, they still prefer to eat from their own production to ensure that the food is safe. Also, majority of the farmers said that they are not convinced with television advertisements because companies promote their products even if the quality is bad.

In terms of colored rice, many are familiar with red rice. The elderly prefers red rice over white rice since it is more nutritious. Others comment that any color would do as long as it is natural. However, children might not prefer colored rice because they are already used to white rice. However, if the color is yellow, others commented that children might associate this with star margarine and might find the color more exciting. Many said that white rice also turns into yellow (they call this bahay-bahay) if not stored and dried properly.

Other specific comments per location are:

- Lunoy: If rice is colored yellow, they might doubt its authenticity. This is because they heard that Golden Rice is being developed by the government. If they have to buy this from the market, it might not be authentic.
- Banban Grande: They are not particular with the color of the rice. What is important for them is that they can eat rice three times a day.

Many have eaten kutsiyam or red-colored rice. Common reactions are that it tastes and smells good. One participant in Banban Pequino has tried yellow rice in Hongkong (Korean restaurant). The rice was cooked with coconut milk and it was not artificially colored. She said that the rice came from Thailand and it tasted like it was mixed with star margarine. She found the taste good/pleasant.

Despite this, majority would still prefer white rice because it looks appetizing, the color is attractive, and they are used to eating white rice. However, there were some that preferred other colors. Other specific comments include:

- ☐ Yellow (said by the same participant who had tried yellow rice in Hongkong) because it is soft and smooth
- ☐ Any color as long as the market/buying price is high

### **C. On Knowledge and Attitudes on Diet and Nutrition**

In general, the participants have a clear understanding as to what is healthy and what is not. Some comment that not all food approved by the Bureau of Food and Drugs are safe since some are not fresh. They also mention that not all expensive foods are nutritious and not all nutritious foods are expensive. They recommend that the most nutritious foods are vegetables because they are rich in vitamins. They have all kinds of vegetables other than lettuce, broccoli, and cauliflower. Examples of vegetables that are nutritious are beans, leafy vegetables (like kamote tops, alugbati, squash tops, bitter gourd tops, horse radish/malunggay, and water spinach/kangkong), squash, monggo, and okra. Among the vegetables, malunggay was considered the best. Aside from vegetables, they mention that fruits, meat, and fish are needed, and rice is also important because these contain carbohydrates that turn into energy.

Many commented that achieving a balanced diet is also important. However, their choices are limited by their household budgets. When asked which among budget and health is given priority, majority answered that both are equally important. Most of the time, they do not have enough money to buy expensive nutritious foods; they would resort to cheaper alternatives like serving vegetable soups (laswa and tinola) for their children. Based on this, the respondents are aware that there are cheaper alternatives for healthy foods that contain similar nutrients found in more pricey nutritious foods.

For unhealthy food, they mention the following as examples:

- ☐ Junk food (Most of the respondents allow their children to eat junk foods in an average of 3 times a week)
- ☐ Soft drinks
- ☐ Sweets
- ☐ Artificially preserved foods like hotdogs, corned beef, and other canned goods (most of the respondents allow their children to eat artificially preserved foods in an average of once a week)
- ☐ Dried fish
- ☐ Alcohol (whisky is the common alcoholic beverage in the area)
- ☐ Tambo/bamboo shoots (they heard from the elderly that this does not contain any nutritional content)

Participants still consider food as their main concern when it comes to the health of their family. They mention that food safety is important, because it is expensive to get sick. To be free from sickness/illnesses is their second concern, followed by a balanced diet and nutritious food. Regular exercise and clean surroundings are also common answers.

For their children, their topmost concern is nutrition. This concern is addressed by providing their children with vegetables, milk, and vitamin supplements, which would result to good memory and healthy body. The second topmost consideration is safety. This is important because many foods today contain harmful ingredients which would lead to sickness. Other considerations are affordability and children's preference.

The concerns for adult's health are the same with that of children, because the same food is served for the entire household. Adults commonly eat anything that is available. Other considerations are health illnesses commonly experienced by adults like high blood pressure and arthritis. In relation to this, adults should minimize, if not avoid, taking meat, pork, salty foods, and soft drinks. When it comes to elderly, enough rest, sleep, and exercise are more essential for them.

For pregnant women and mothers, food safety for the mother and child, complete pre- natal checkups, complete immunization, avoidance of bitter and unhealthy foods like sweets, soft drinks, and salty foods (they mention that this can cause urinary tract infection, as mentioned by the local midwife), eating of nutritious foods like vegetables and fruits, and enough rest and exercise are all taken into consideration. It was also mentioned that eating only one cup of rice per meal is important, as told by doctors. They mention that if a pregnant woman eats too much rice, the baby may grow too big, thus resulting in a caesarean birth, which is very costly.

Most of the respondents only visit the rural health center when they are ill or when they feel something abnormal. Medical services by the health center and barangay's rural health units are the following:

- ☐ Immunization for children (available every month)
- ☐ Prenatal for pregnant women (available every month)
- ☐ Optical checkups
- ☐ Dental services (commonly done in sponsoring schools, but children still have to pay P30)
- ☐ Botika ng Barangay (cheaper medicines)
- ☐ Medical missions by armies, private doctors and private organizations
- ☐ Circumcisions
- ☐ Patak programs such as Vitamin A
- ☐ Anti-rabies
- ☐ Anti-polio
- ☐ De-worming
- ☐ Anti-filariasis campaign (filariasis is a disease that comes from mosquitoes)

Respondents avail of these services once a year. For consultation/checkups, they would sometimes go directly to private hospitals. Also, the barangay health workers announce the

schedules of free checkups by doctors and midwives coming from the town proper. However, these services are not entirely free and are commonly done to promote medicine brands.

In general, only women are familiar with the nutrition and health programs in their area. They are thankful for these programs because the services are provided for free; however, they comment that not everyone can be accommodated. When asked how these services could be improved, they replied the following: the supply of medicines should increase, there should be more medical missions, and more doctors or medical teams should be sent to these local communities.

#### **D. Information Sources**

Farmers usually do not avail the common sources of information, mainly because they spend most of their time on their farm. Their wives, however, usually get most of the information. In their case, they trust the government as a reliable source of information. Most common examples mentioned by them are as follows:

- ☐ Department of Agriculture
- ☐ Rural Health Unit
- ☐ Doctors and other members of the medical profession
- ☐ Teachers
- ☐ Government
- ☐ Television (however, majority of the participants do not find advertisements reliable or objective)
- ☐ Radio
- ☐ Newspapers
- ☐ Other farmers
- ☐ Vendors/manufacturers

When asked which among these they are considered as reliable sources of information, they mentioned the following:

- ☐ Department of Agriculture
- ☐ Government (e.g., if it is approved by Bureau of Food and Drugs)
- ☐ Government doctors
- ☐ Manufacturers (however, they do not easily believe in these companies' claims; they have to try the products first)

The best sources of information for them are doctors, health and social workers of the rural health unit, and the town's health center. Another common answer is anyone from the medical profession that can be trusted, preferably from the government. The reasons why participants consider these as the best sources of information are that they can be trusted

and barangay health and social workers are properly trained. They are also well-coordinated with the municipality, making them reliable.

Almost all the participants prefer representatives from the government and other organizations to personally talk to them through seminars and meetings. This way, they can ask questions regarding issues that need clarification. Also, they want someone they have seen and heard from to “blame” if anything goes wrong.

All groups are familiar with advertisements and promotional campaigns concerning healthy diets and good nutrition. The following are the most common:

- ☐ Knorr (“Makulay ang Buhay” theme song)
- ☐ Lactum, Bear Brand, Alaska and Sustagen (Most popular taglines are Panatag by Lactum and Laking Gatas by Bear Brand)
- ☐ Lucky Me
- ☐ Clusivol
- ☐ Celine

When asked what made them recall these advertisements, the following are their answers:

- ☐ Because they use children as endorsers. For instance, one respondent said that his child was motivated to eat vegetables after seeing the advertisement of Knorr (“Makulay ang Buhay”).
- ☐ In a way, the advertisements inform the parents of the nutrients that are good for their children.
- ☐ Because they include malunggay in the advertisement (malunggay is one of the common vegetables eaten by farmers and is also considered as one of the best source of nutrients)

Most of the participants found the advertisements and campaigns effective since these were able to influence their children. However, the parents do not easily believe in them. They would first try the product to verify if what was advertised or claimed by the company is right or not. Also, for them, the effectiveness of the advertisement is not influenced by a popular figure such as actors/actresses endorsing the product. On the other hand, when it comes to health and nutrition, they perceive doctors as more reliable to endorse the product. In cases when the respondents do not trust the endorser, they check if the product was approved by Bureau of Food and Drugs to determine if it is safe (lifted from Guiso notes).

## **E. On Vitamin A Deficiency**

Many are vaguely familiar with Vitamin A deficiency and its symptoms, only citing problems with eyesight. The rest of their answers were based on their knowledge on general malnourishment (such as pale and weak) and not specifically on vitamin A deficiency.

When the person is claimed to have vitamin A deficiency, they mention that they exhibit or experience the following:

- ☐ Eye problems such as loss of vision, near-sightedness, and other eye related diseases.
- ☐ Anemia
- ☐ Pale skin
- ☐ Thin or malnourished
- ☐ Does not perspire
- ☐ Weak
- ☐ Goiter
- ☐ Yellowish eyes

When asked of the source of information, most of them answered that these are learned information from school. These answers show that the participants are not clearly familiar with the symptoms of vitamin A deficiency.

With this lack of knowledge, most respondents are not familiar with foods rich in vitamin A, with some were just naming common vegetables. However, they mention that they eat these regularly, depending, however, on the season. Other specific answers are: everyday, as long as it is available; once a week at a minimum (but not every day; they get fed up if they eat the same thing every day); with squash, maybe thrice a week; for children, twice a month; for adults, twice to thrice a week. The following are the common answers:

- ☐ Malunggay or horse radish (most common answer)
- ☐ Squash (second most common answer)
- ☐ Sweet potato
- ☐ Papaya
- ☐ Tisa
- ☐ Carrots
- ☐ String beans
- ☐ Anything yellow
- ☐ Other vegetables such as ampalaya (bitter melon), kangkong (water spinach),

tugabang, gabi, kulitis, monggo, and okra.

However, the participants admit that there are times they do not eat these types of food. Some reason out that they cannot eat these if these vegetables are not in season. Others comment that they cannot eat these when they feel lazy to prepare the food/dish and when they have been eating the same vegetables for some time.

In terms of the Vitamin A Patak Pinoy Program, many mentioned that they have availed of it but are not familiar with the name. Majority of those who are familiar were women, mainly

because they are the ones that interact with facilitators of this program. When those who are not familiar with the Vitamin A Patak Pinoy Program were asked why they do not know the program, the participants said that it is not available in their barangay health center and that only a few were able to avail of the service. On the average, the Vitamin A Patak Pinoy Program is commonly done twice a year. When asked if they were aware of any other program that concentrates on addressing vitamin A deficiency, they were not familiar with other programs by the government and other institutions.

## **F. On Golden Rice**

All the participants were not familiar with yellow rice. However, there was an association with Arroz Valenciana, a local paella-like dish which has yellow-colored glutinous rice served mainly in fiestas. Some also asked if it was the same with yellow rice served in restaurants. Because of this association with a local dish, all were willing to try, as long as it was cheap and it has no bad side effects. Color was not an issue for them (especially adults), as long as it is safe. Most showed signs of curiosity, commenting that they were willing to test this to know how it tastes. They would also comment that in hard times like this, people do not usually care what the color of the rice is, as long as they can eat. Some even mentioned that they would be willing to try it, as it may be a cure for hypertension. This shows their interest for rice with many uses.

A unanimous yes came after being asked if someone mentioned that this yellow rice was filled with vitamin A. All agreed with the Department of Agriculture as the reliable person to tell them that the yellow color gives vitamin A. They want the seeds to be certified and approved by Department of Agriculture before it is released. Initially, they want the Department of Agriculture to give the seeds for free.

Other than Department of Agriculture, they also consider the following persons and organizations reliable:

- ☐ Barangay captain
- ☐ Doctors
- ☐ RHU
- ☐ Those who have tried it
- ☐ Those who are promoting it (they should have tried it first)

Majority are willing to replace white rice with nutrition as the topmost consideration. Other specific comments are:

- ☐ Yes, especially if it has the same nutritional content.
- ☐ Yes, if it has higher nutritional content.
- ☐ Yes, if it will be given for free.
- ☐ Yes, if it tastes good.



- ☐ Yes, since we already tried white rice, we also want to try yellow rice.
- ☐ Yes, because yellow is good for eyesight.
- ☐ Yes, since yellow might be more exciting for children. They might be happier with yellow rice.
- ☐ Yes, if the children will like it.

For those who are not willing to replace white rice with more nutritious yellow rice, their main consideration is they are already used to eating white rice.

When they were told about Golden Rice, almost all have not heard of it. When the picture of Golden Rice was shown, all were listening and looking at the picture intently. All appeared to be really interested, smiling in disbelief and awe. Some already started asking questions about it even before the moderator spoke.

The common questions asked by the participants when the picture was shown to them were if the color was natural or artificial and where did Golden Rice come from.

When asked about their ideas about genetically modified organisms, no one was familiar about it. However, all were interested to learn more about genetically modified organisms or genetically modified crops and were willing to attend a seminar regarding this. Because of their unfamiliarity with this, all were still willing to try Golden Rice despite it being a genetically modified organism. Based from observation, the participants were quite convinced with the explanation of Golden Rice given by the moderator. Majority of the participants would eat Golden Rice because of its Vitamin A content. Farmers were both interested to consume and plant Golden Rice.

These are the things they would like to know before eating Golden Rice:

- ☐ Is it safe?
- ☐ Is it soft or supple?
- ☐ Is it maalsa or does it expand well when cooked?
- ☐ Have you tried it?
- ☐ How much will it cost us?
- ☐ How much are you supposed to eat before you will be satisfied?
- ☐ Does it require more water in cooking?
- ☐ If its color will not give any side effects?
- ☐ Is it cheaper?
- ☐ How will it be rich in vitamin A if pesticides and insecticides are being used?
- ☐ Is the taste the same with ordinary rice?
- ☐ Who developed it?

- ☐ Does it rise well when cooked?
- ☐ How much are you supposed to eat before you will be satisfied?
- ☐ Does it require more water in cooking?
- ☐ Does the yellow color have side effects?
- ☐ What other vitamins can we get?
- ☐ Is it good for the health?
- ☐ Will it give long life?
- ☐ Are there chemicals placed in the seeds?

Before planting Golden Rice, farmers would also like to address the following concerns:

- ☐ What is the market price?
- ☐ On the first time that it will be introduced to us, will it be given for free?
- ☐ What type of land can it be grown on: upland or lowland?
- ☐ How long will it take to harvest?
- ☐ Is it resistant to rain or can it withstand the wet season?
- ☐ Is the harvest yield, the same or better?
- ☐ Can it withstand the heat during dry season?
- ☐ Is it for consumption, commercial, or both?
- ☐ How many days will it take to harvest this variety?
- ☐ Can we plant it in upland places?
- ☐ Will it affect its neighboring farm which has a different variety of rice? Will it lead to cross breeding?
- ☐ Is the yield higher?
- ☐ Is it prone to pests or not?
- ☐ If the grain is not yet mature, will the coat be green just like any other grains?
- ☐ Can it be used for the second cropping?
- ☐ When will it be available?
- ☐ Will it grow tall?
- ☐ Who developed it?
- ☐ Is it already available in the market?
- ☐ Will the consumers buy this rice?

- ☐ Is there an established market for this?
- ☐ Will it grow well?
- ☐ Will the yield from production be the same or better than other rice varieties?
- ☐ Will the consumers buy it?
- ☐ Is the price the same with other rice varieties?
- ☐ How long will it take to harvest?
- ☐ Is it the same with other rice?
- ☐ Will the first seeds be given for free?
- ☐ Will the yield be high?
- ☐ Can it be planted directly?
- ☐ Will it require more fertilizers?
- ☐ It is applicable with our climate/weather?
- ☐ Is it applicable for irrigated or non-irrigated land?
- ☐ Where did the yellow color come from?
- ☐ Are there chemicals placed in the seeds?
- ☐ Is it resistant to sudden changes in weather? Other comments the farmers shared are as follows:
- ☐ If the seeds are available already, they want DA to distribute it.
- ☐ The farmers will compare the growth and yield of yellow and white rice; if growing yellow rice is better, then they will allocate more land to plant the Golden Rice.
- ☐ When asked if they wanted to change the name of Golden Rice, they said it was appropriately named, and insisted in maintaining the name.

## **Leyte–Samar Province**

### **Non-farming Households**

#### **A. On Rice/Food Choices**

For most respondents, food consideration for children and adults are the same. They identify that all members of the family should eat a balanced diet and eat nutritious food like rice, vegetables, fish, meat, and fruits. But rice is a staple in their diet.

Only one parent (Brgy. Rizal II, Babatngon) says that in their household, they discriminate food according to age. According to her, children must eat food appropriate for their growth, while adults can have anything. Meanwhile, most parents are also conscious about the safety of the food they serve to their children because some develop allergies on certain food. Freshness is also an important consideration on food.

Respondents admit that most of the time, a balanced diet is not followed because of the children's unhealthy eating. Some children ask for Milo (chocolate powder) as their viand even though rice and fish are available on the table. Children also prefer junk food compared to fruits. Despite insights on healthy and balanced diet, all respondents agree that everything depends on the budget.

The amount of rice the family eats depends on the size of the household. The respondents cook 3 to 4 cups of rice every meal or 9 to 12 cups every day. Generally, respondents cook rice thrice a day, but when the family runs out of rice, they only eat a meal per day. This "one-day-one-eat" phenomenon is seldom in the areas covered.

Children's rice consumption depends on their appetite. While some parents moderate their family's food consumption, there are those who allow their children to eat as much as they want. Only one respondent substitutes bread with rice for breakfast (Brgy. Rizal II, Babatngon).

The non-farming respondents gave the following as the top 3 characteristics that they look for in rice: 1) color; 2) smell; and 3) taste. They prefer white rice because they have known and eaten only white rice in their lifetime. Meanwhile, good smell of rice is attributed to good taste.

All the respondents prefer commercial and well-milled rice. According to them, commercial rice leaves a good feeling on the stomach whereas NFA rice makes them feel hungry after a while. NFA rice also has a distinct smell and tastes bland.

In most households, the mother decides what food and rice should be served on the table because she handles budgeting. Some say that the father or the couple should decide on behalf of the family when it comes to rice.

Respondents are generally willing to try new food. But before trying, they are concerned about nutritional value, safety, source, taste, and availability.

Meanwhile, non-farming respondents differ with regards to perceptions on colored rice. They only know of samulawon as colored rice. Samulawon is white grain in nature but turn yellowish due to prolonged storage. Hence, all respondents have never tried authentic colored rice.

Respondents generally prefer white rice than colored rice due to the following reasons:

1) they are used to only white rice; 2) it tastes delicious (especially Dinorado); 3) it looks good especially when served to visitors; and 4) it is the most common and the most available. One respondent (Brgy. Cangumbang, Palo) shares that visitors prefer white rice than reddish rice. White rice maybe perceived as clean and safe.

## **B. On Knowledge and Attitudes on Diet and Nutrition**

According to the respondents, a balanced and healthy diet ideally consists of rice, vegetables, fruits, fish, and meat. However due to financial constraint balanced diet cannot be achieved in their households.

One respondent (Brgy. Cangumbang, Palo) thinks otherwise. According to him, a balanced diet can still be achieved in a day, if not in every meal. Say, meat as viand in the morning, vegetables for lunch, and fish in the evening. If again not followed, he insists that one can have a balanced diet in a week by alternating food such as vegetables, fish, and meat viands in the said period.

A healthy and balanced diet is a concern for children, adults, and pregnant women alike. According to the respondents, children must be well fed and must stay in good shape. Vitamin supplements are also good for health but they cannot afford such.

Respondents believe that like children, adults should also drink milk, eat good food, and exercise regularly. According to a respondent (Brgy. Rizal II, Babatngon), his family members are actually vegetarians since they eat vegetables more often than meat or fish. Meanwhile to stay healthy, all respondents believe that pregnant women must undergo regular pre-natal check-ups. Also, those who are pregnant should take vitamins, eat less on sweets for herself and for the baby.

Medical services available in the community include immunization and vaccination for children, prenatal check-up for pregnant women and general check-up for all the locals. There are also medical missions and bloodletting services.

Immunization and vaccination shots for children are usually carried out monthly while pre-natal check-ups are conducted quarterly. General check-ups are held monthly at the town's health center.

No other organizations provide medical services to the community aside from the LGU. Meanwhile, the church through the Basic Ecclesial Community (BEC) conducts organic farming seminars in Brgy. Cangumbang, Palo.

## **C. Information Sources**

Television is the most usual source of information on food and nutrition in the baranggays. Other sources include books on health and nutrition for the Barangay Nutrition Scholar (BNS), seminars conducted by Regional Health Units (RHU), newspapers, and posters. Radio is seldom used in households. The Department of Social Welfare and Development (DSWD) also conducts mother classes and family planning once a year in Brgy. Sawa, Basey, Samar.

According to the respondents, the best source of information is a direct interaction with medical practitioners. They would prefer to listen to lecture speakers on health and nutrition and could later ask questions.

The most popular TV advertisements among the non-farming respondents include Milo, Anlene, as well as Myra-E. Meanwhile among TV programs, Salamat Doc is the most popular.

Advertisements garner negative and favorable responses from the locals. Some people find advertisements hard to believe and think that these are only shown for profit purposes. One respondent in Brgy. Cangumbang, Palo shares that he does not use monosodium glutamate (MSG) in cooking because he heard that it is not good for health.

On the other hand, some respondents find the advertisements credible. One respondent in Brgy. Cangumbang, Palo said that her grandson drinks Gain Plus and she can see positive results.

Many are aware of health and nutrition products but they do not get to try them because of financial difficulty. On the other hand, some respondents are not conscious about TV advertisements at all.

#### **D. On Vitamin A Deficiency**

The respondents are not familiar with Vitamin A deficiency (VAD) but they have identified symptoms such as blindness and enlarged stomach due to worms. Vegetables (like sweet potato tops, horse radish, carrots and squash), fish, vitamin-

fortified rice, iodized salt, fruits, and milk are vitamin A containing foods for them. Some respondents are not even conscious if the food they eat contains vitamin A. This may also indicate the lack of consciousness of people towards food they eat.

Easily accessible food like sweet potato tops grown in backyard is frequently eaten while fruits like apples and oranges are expensive and not readily available as these are sold only in the nearby city.

People participate in the Patak Pinoy Program twice a year. A BHW goes around the barangay and distributes vitamins to every household with children. According to the respondents, the program is good as most children benefit from it.

#### **E. On Golden Rice**

Respondents are not familiar with yellow-grained rice but willing to try it given that: 1) the taste is the same with white rice; 2) the price is affordable; and 3) it is available in the market. According to them, a reliable person could convince them to eat yellow rice especially if the grains are fortified with vitamins such as Vitamin A. Meanwhile, one person in Brgy. Cangumbang, Palo says that he has seen pink rice, and he is willing to try it.

Almost all respondents are willing to replace white rice with yellow rice however gradually. They intend to cook yellow rice alternately with white rice every other meal. Others would observe first before trying.

One respondent (Brgy. Buenavista, Basey, Samar) is concerned whether yellow rice would trigger hypertension. While another would not trade white rice for yellow rice because according to him, “white rice is visible in the dark.”

All respondents except for one person in Brgy. Cangumbang, Palo have never heard of Golden Rice. The exception has seen yellow rice in a Japanese TV channel although he is not quite sure whether what he saw is indeed Golden Rice.

Respondents have never heard of GMO before except for 2 people. One (Brgy. Rizal II, Babatngon) claims that he has heard of the word GMO over the radio although he did not pay attention to that news. The other person from Brgy. Cangumbang, Palo thinks that GMO uses technology such that rice seeds are placed in a test tube for “technicians” to work on.

While Golden Rice is being explained, some respondents look bored but still listened. Upon knowing that Golden Rice and white are practically similar except for color and the Vitamin A content, most of them are willing to try eating the new rice. One respondent (Brgy. Cangumbang, Palo) is already thinking of negotiating with the Department of Agriculture this early to make the rice available to farmers in the province.

According to the respondents, some of the information that consumers want to know before eating Golden Rice are: 1) how safe it is; 2) if it would have negative side effects;

3) if cooked rice would spoil easily; 4) does it taste good; and 5) if PhilRice already have the rice seeds.

## **Subsistence Farmers**

### **A. On rice farming**

Subsistence farmers from the 3 barangays under study engage in farming for the following reasons: 1) for household consumption; 2) for income source; 3) for direct selling to non-farming neighbors at a cheaper rate.

Respondents believe that planting their own crops is better than buying rice from the market because they no longer need to shell out money every day for it. Moreover, they sell harvests in excess of their household needs in order to buy commodities like salt. They also get to help their neighbors by offering cheaper rice because they eliminate the middleman which is not the case when rice is bought from the market.

Locals also farm to make the rice-suitable land productive and to continue their family’s farming tradition. According to one respondent (Brgy. District 3, Babatngon), rice compared to other crops is easier to tend and does not require much attention.

Meanwhile, their top three problems with regards to farming are the following: 1) financial constraint; 2) pest attacks; and 3) poor irrigation system. Expensive fertilizers drain farmers’ profits, while pests like field mice and golden kuhol (snail) destroy their crops. Postponed construction of the irrigation system due to lack of funds also affects their livelihood.

Another problem mentioned is the frequent storms in the province, which results to lower yield and to grain drying difficulties. According to the farmers, grains that have been wet

before drying called samulawon are hard to sell at a decent price because it becomes yellowish in color not pure white.

Farmers do not distinguish rice varieties for wet and dry season. Most of them plant similar variety for both seasons although a respondent (Brgy. District 3, Babatngon) prefers a seed that can survive extreme hot weather condition. They plant RC18, RC10, and N3 varieties. In addition, they are not particular about primary information before planting a rice variety. For the farmers, the Department of Agriculture technicians provide information to them about new farming techniques.

Farmers themselves decide what variety to plant in his farm. They typically recycle seeds from their previous farming activity because discounted seeds from DA usually arrive late for the next planting season and because they cannot afford hybrid or certified seeds. Besides according to them, hybrid rice thrives on irrigated farmlands and requires more fertilizer.

Aside from rice, root crops (sweet potato, cassava and yam) and vegetables are grown in area, but only for household consumption. On the other hand, farmers seldom grow corn in the area and are unaware of Bt Corn.

Most respondents state that a large portion of the harvest is kept for the family while the rest of the harvest is sold to traders. Rice allocation also depends on the size of the family. They say that only a few rice sacks should remain in the house, otherwise might be ravaged by rats.

Meanwhile when farmers have a huge borrowing, most of their harvests are sold. For instance out of 70 sacks, 50 sacks are sold or 71.4% of the total harvest. In addition, borrowings should be paid on time so that they can borrow money again for the coming cropping season. Thus, loan amount and family size affect allocation of rice harvest.

### **B...On Rice/Food Choices**

Parents say that they do not discriminate food for younger and for older members of the family. For them, rice should be served in every meal and milk should be drunk at least once a day. For most respondents, financial constraint prevents them from eating a well-balanced diet. They cook what is available, and eat and drink what is served. On the contrary, one respondent (Brgy. Libertad, Palo) says that he can achieve a balanced diet the "poor man's way" by maintaining a vegetable garden in his backyard and by eating his own rice produce.

The amount of rice eaten daily depends on the size of the household. For the 3 barangays, they consume around 1 to 2 kilograms of rice each day with 2 to 5 cups of rice per meal. Pets such as dogs are included in the family's daily rice budget.

Most families cook rice thrice a day because according to them, rice is best when served hot and hardens when cold. Some households cook rice only twice a day. A few households replace rice with root crops once a day, thus eat rice for breakfast and dinner only. Meanwhile, some families eat leftover rice from dinner for breakfast the next day.

When it comes to rice, subsistence farming households consider the following: 1) price;

2) smell; and 3) taste. Respondents primarily consider price because they only buy what they can afford. They are also conscious about the smell of rice, as it is associated with taste.



Respondents differ on who should decide on which rice and food to eat. Some believe that the farming husband should decide because he knows more about the different kinds of rice. On the other hand, some say that the wife should decide because she manages the family budget. Some prefer to discuss rice-buying decisions together. But overall, budget is always considered when buying food.

Budget is also the reason why some families buy NFA rice even though based on experience, they get hungry 2 hours after eating meal. Some women mix NFA rice with commercial rice to lessen the bad qualities of NFA rice such as its odd smell and taste.

Most respondents are open in trying new food given one or more of the following conditions: 1) if the food is nutritious; 2) if the price is low; 3) if it is given for free. Safety and taste are also important considerations before trying new food.

Overall, respondents prefer to eat white rice compared to colored rice due to the following reasons: 1) because they have been used to eating white rice, 2) because white rice smells good; 3) because white rice tastes good; and 4) because white looks clean.

If not white rice, some would prefer to eat reddish or yellowish rice because they think it is more nutritious. Some positive perceptions about colored rice are:

- “It tastes good.”
- “Maybe it got a different color because it is grown without pesticide.”
- “It contains more vitamins.”

A respondent (Brgy. Libertad, Palo) compared yellow rice with yellow teeth such that yellowish means healthier.

Some respondents have tasted spotted, reddish and samulawon rice but children find them bitter. Given this fact, children can then influence the household’s decision on rice and food choices.

### **C. On Knowledge and Attitudes on Diet and Nutrition**

According to the respondents, a healthy diet must include rice, vegetables, fruits, fish and meat. They find all these foods mentioned as nutritious.

The barangays under study prioritize nutrition and cleanliness when it comes to their family’s health. Children, adults, and pregnant women must all be able to eat a balanced diet. Parents believe that growing children should drink milk, and take vitamin supplements especially if they are not eating well. Like adults, children must eat well thrice in a day. Moreover, to prevent getting sick, children should eat a balanced diet even without the aid of vitamin supplements.

Due to financial constraints, all members of the family eat any food available regardless of the food’s nutrition content and the balance of the meal. Nonetheless, rice is a staple in every meal.

Pregnant women receive special attention. According to the female respondents, they should undergo regular pre-natal check-ups and immunization. These services are available in the RHU and a midwife comes weekly to the community to give immunization shots.

Other medical services available in the community include vaccination and immunization for children, general consultation for all the people, circumcision for boys and bloodletting for donors. The local government unit sponsors all of these services.

Some services are rendered thrice a year while others are conducted monthly. Meanwhile, private or NGO-sponsored medical services are seldom.

#### **D. Information Sources**

Television is the most accessible source of information on health and nutrition for the locals. They get information from TV programs such as *Salamat Doc* and *Umagang Kay Ganda*.

Aside from TV, health information within the barangays is usually through the BNS and BHW. The RHU gives lectures and seminars to the BNS and BHW who then share their knowledge to the locals. At times, they conduct mother classes and put posters on health and nutrition at the barangay hall.

According to the respondents, information coming from medical practitioners and from government agencies is more credible than from other sources. They also prefer face-to-face information dissemination like forums, lectures and seminars so that they can ask for questions, clarifications, and get answers right away.

When it comes to TV, the respondents are familiar with advertisements such as *Liveraide* and *Alaxan*, but these are usually ignored. Some people perceive them as mere promotion and business propaganda. Yet some find the advertisements relevant and informative, thus buy them if they can afford.

#### **E. On Vitamin A Deficiency**

Subsistence farmers in the 3 barangays are generally not aware of Vitamin A deficiency (VAD). One respondent (Brgy. District 3, Babatngon) even cannot distinguish VAD from iodine deficiency.

According to a few respondents, food containing vitamin A are squash, sweet potato tops and green leafy vegetables. Respondents also mentioned apple, mango, banana and papaya as fruits that contain vitamin A. The respondents' answers maybe right but most of them are just guessing. They usually enumerate all the vegetables and fruits that they know.

The locals eat all the food mentioned above although not in every meal. They say that fruits are seasonal and expensive that is why they do not eat them regularly. Meanwhile, vegetables like sweet potato tops are typically grown in the backyard, thus eaten frequently.

Currently, only few among the respondents are engaged in backyard gardening. Respondents in Brgy. District 3, Babatngon share that a few years ago, the LGU put up a "Gulayan ng Barangay" backyard gardening program a few years back, but did not prosper due to lack of information dissemination and public cooperation.

To curb VAD, BHWs together with a nurse go around the barangay twice a year to provide Vitamin A drops to children aged 0 to 6 years. According to a BHW (Brgy. District 3, Babatngon), the locals are “spoon-fed” because they prefer house-to-house visit of the BHW rather than bringing their kids to the Barangay Health Center to avail of the service. Aside from Patak Pinoy, no other program addresses VAD in the community.

## **F. On Golden Rice**

The respondents are neither aware of Golden Rice nor genetically modified organisms (GMO) except for one respondent who is similarly the Barangay Captain. According to the Barangay Captain, a civil society group asserts that GMOs propagate cancer cells.

Aside from samulawon, the respondents are not aware of any other colored rice. Samulawon is white grain turned yellow after getting damped, dried and stored longer than usual.

Most respondents are willing to eat yellow rice provided that it is widely available and tastes similar to white rice. Nutritional value is also crucial to convince them to try yellow rice. Only one person (Brgy. Libertad, Palo) correctly described yellow rice as vitamin A- enriched and she got the clue through its color, yellow.

There are few in Brgy. Sawa, Basey that do not want to “try” eating yellow rice because according to them, “white rice might soon be neglected.” Since they belong to a farming community, maybe they perceive yellow rice as a threat to their livelihood of planting and selling the traditional white rice to the public.

In general, respondents are willing to try eating yellow rice provided that a reliable person tells them that it is good for them. When it comes to permanently replacing white rice to yellow rice, most are willing but a few others are hesitant. The respondents are concerned about nutritional content, taste, and safety before they approve to replace white rice on the table.

Amusement is the dominant reaction of the respondents when shown the picture of Golden Rice. They looked at the photo intently in order to spot differences between the white and yellow rice. Some compared Golden Rice to rice mixed with margarine while others doubted that the authenticity of the yellow color. Noticeably, one respondent (Brgy. Libertad, Palo) concludes that Golden Rice is a complete meal because it already contains vitamin A.

Most respondents never heard of Gold Rice prior to the FGD. One person (Brgy. District 3, Babatngon) thinks that yellow rice is fortified with vitamins after reading about it from a newspaper in Leyte. Except for one respondent (Brgy. District 3, Babatngon), all respondents never heard of GMO. That one person thinks that GMOs as “high-tech” and a product of ingenuity.

Upon hearing the proper information about Golden Rice, a respondent (Brgy. District 3, Babatngon) expressed his “101%” willingness to try Golden Rice. Before eating Golden Rice, the respondents want to find out the proper way of cooking the rice, the amount of water it needs for cooking, its maximum freshness period, and whether Golden Rice would harden when cold because other varieties do. Some are curious whether the grain is really yellow or margarine was added to add the yellow color.

Subsistence farmers need to know the following information before growing Golden Rice: 1) length of time before they can harvest the new rice variety; 2) commercial viability; 3) amount of water and fertilizer requirement, 4) suitable planting season; 5) process of planting; 5) germination period; 6) price and source of seeds; 7) yield; 8) the color of the stalk whether it would attract birds or drive them away. Farmers will compare white and yellow rice based on the mentioned information.

## **Commercial Farmers**

### **A. On Rice Farming**

The top three reasons mentioned in the FGDs why local people engage in rice farming are as follows: 1) as a means of living; 2) to pay debt from previous planting season; 3) to continue the family practice of tilling the inherited land from one generation to another.

On the other hand, the following are the top three problems the commercial farmers face: 1) financial constraint; 2) poor irrigation system; 3) unpredictable weather patterns.

First, farmers need a huge amount of money to buy inputs namely seeds and fertilizer for their planting. Since they do not have a Farmer's Cooperative to borrow from, they run to Chinese traders or loan sharks that in return ask for double the principal amount of the loan. Sometimes they pay in cash, but on other times they commit a part of their harvest, hence pay in sacks of rice. Locals call the later "palangoy."

Second, there is no proper irrigation in the farming areas. In fact, two barangays share one irrigation system. Sometimes the water channel is even clogged. Fortunately, the area receives abundant rainfall hence they depend on this natural water.

Third, unpredictable weather patterns and flooding cause their crops to get drowned. Leyte and Samar islands are located in the Eastern Visayas region, an area frequented by typhoons. According to some respondents, the weather is even harder to predict these days because it rains hard even in dry season.

Other problems identified are pest attacks such as field mice during planting season and the absence of a mechanical dryer during harvesting season. Since the weather pattern is erratic, they cannot merely rely on the sun to dry their newly harvested grains.

Farmers in the 3 barangays use no specific variety of rice seedlings for wet and dry seasons. Some use the seeds from the previous season or any variety that is readily available. Nonetheless, the most popular varieties are RC18, RC10 and N3.

Farmers get information about new rice varieties and farming techniques from the Department of Agriculture. According to them, a technician visits the community and orients the locals about current trends in farming but not on a regular basis. On the other hand, some learn from mere observation or from consulting each other. An example of observation is by counting the number of grains in a stalk to know if the variety yields well.

When it comes to decision making on what variety to plant, the one who works in the field (usually the husband) has the upper hand. For others, both husband and wife discuss and decide for the farm.

The most popular rice varieties in the area are RC 18, RC 42 and N3. Some farmers acquire seeds from the Department on Agriculture at half the price while some buy hybrid seeds if they can afford. Unfortunately, most farmers are not able to avail of the subsidized seeds because of its limited number. One barangay (Brgy. Magsaysay, Alangalang) wisely puts the seeds on lottery for a fair distribution. Unfortunately, on some occasion, some high-capital farmers reserve and hoard even before the seeds reach town. Thus, nothing is given to farmers who need the seeds the most.

However, DA programs elicit various reactions. Some find the programs beneficial while others disagree because according to them, the seeds do not yield well.

In the 3 commercial farming barangays under study, most of their harvests are sold to pay for debt and to gain some profit. For instance, from a total harvest of 40 to 60 sacks of rice, only 10 sacks are kept for household consumption while the rest are sold.

Aside from rice, residents grow coconut trees and other fruit bearing trees, root crops (such as sweet potato and yam), and vegetables at the backyard for their own consumption. Nonetheless, they cut coconut trees near their rice farm because according to them coconut competes with water consumption. Meanwhile, corn is seldom planted and none among the participants knows about Bt Corn.

## **B. On Rice/Food Choices**

Children and adults do not differ in food considerations. Family members, the young and the adult alike, eat and share the same food served on the table. Although, the respondents are aware that meals should consist of a healthy and balanced diet (according to them must consist of rice, vegetables, fruits, and meat or fish), they admit that this is not always achieved due to financial limitations.

Families cook what is available and what is affordable but rice is a must in every meal. One participant (Brgy. Magsaysay, Alangalang) says that he can take salt as viand as long as there is rice to make him feel full. Although adults can live with rice and salt alone, they still strive to provide a decent meal for their children. Nonetheless, some children lose their appetite because of junk food.

Children and adult may eat similar food but they differ in terms of consumption. The amount of rice a family eats each day depends on the number of family members. Of course, adults eat more rice than children. A family can consume less than a kilogram of rice a day, and usually cooks rice thrice a day. But there are instances when families cook rice for the 4th time in a day when rice is not enough.

Respondents say that either the mother, the father, both, or the budget decides which type of rice the family would eat. Color is the primary characteristic that they look for. They prefer white rice, not spotted or yellowish. The yellowish rice that the respondents know of is what they locally call as “samulawon.” Samulawon is white grained rice turned yellow due to prolonged storage. When it comes to food purchase decisions, budget is the main consideration.

Most respondents are willing to try new food for their family provided that they get to taste it first. Taste and price are the primary considerations of the respondents before trying new food, followed by the source or where the food comes from.

Colored rice is largely perceived to have a different taste. Although most respondents are doubtful and hesitant about consuming colored rice, some (Brgy. Pagsulhugon, Babatngon) believe that colored rice contain more nutrients.

One respondent (Brgy. P. Barrantes, Alangalang) says that he has seen black, blue, red, and green colored rice in Metro Manila but never got to taste it.

Generally, respondents prefer white rice due to the following reason: 1) they have been used to it; 2) it smells good; 3) and children find colored rice bitter. Reddish rice is the colored rice referred to by the respondents as bitter.

Given that children find colored rice bitter, it can be inferred that children can influence the family's rice and food purchases.

### **C. On Knowledge and Attitudes on Diet and Nutrition**

Health is the primary concern of families. According to them, a healthy diet ideally consists of rice, fish, vegetables, meat and eggs but not always achieved because they cannot afford to buy all those mentioned food in every meal. Aside from a balanced diet, the respondents are aware that it is better for family members to take vitamin supplements. But the ideal is not observed in their households all the time because of financial considerations.

Meanwhile, pregnant women should take ferrous sulphate and undergo regular pre- natal check-ups. But pregnant women also do not complete their check-ups because they are too lazy to go to the health center.

Programs on health and nutrition are mostly government-sponsored. Complete immunization for children and vaccination against filariasis and sistosomiasis for adults are some of the medical services made available in the community.

Moreover "Garantisadong Pambata", a government program, provides vitamin A drops to young children through a BHW who goes around the barangay every six months. A midwife also comes every first Friday of the month for general consultation. Nonetheless, some people do not attend the services when an assembly is called.

Respondents notice that medical missions are frequent every time election period is approaching.

### **D. Information Sources**

Television ranks first among the usual sources of information on food and nutrition for the local residents. TV is followed by Rural Health Unit (RHU) lectures through BHW and BNS, and then radio. They frequently watch programs like Umagang Kay Ganda and Salamat Doc, both from the ABS-CBN station.

Television commercials on vitamins and milk are easily recalled, but respondents think that these campaigns are mere business propaganda. A respondent (P. Barrantes, Alangalang)

points out that people do not even understand the main point of some advertisements. While others expressed disbelief, some perceive the TV commercial's information as credible.

For the respondents, the best source of information if not TV is through talks and lectures by persons from the health sector.

### **E. On Vitamin A Deficiency**

Most respondents are not aware of Vitamin A deficiency (VAD). One person (Brgy. Pagsulhugon, Babatngon) has identified blindness and weight loss as symptoms of VAD. According to the respondents, vegetables such as squash, pechay, cabbage, bitter gourd, and fruits are vitamin A-rich food. However, the respondents find these foods expensive hence do not eat them as often as they want.

Local residents actively participate in government-sponsored Patak Pinoy program which, according to them, are conducted twice a year. No other VAD-related medical service is conducted in the barangays.

### **F. On Golden Rice**

All the respondents are not familiar with yellow grain rice. But they are willing to eat colored rice if within reach or given a sample. A person in authority (i.e. from the Department of Health) would easily convince them to eat yellow rice and even to plant them. Although they are willing to try yellow rice, some are not willing to replace white rice because white is the color that they have known ever since. One respondent (Brgy.

P. Barrantes, Alangalang) is concerned that her children might not eat any rice that is not white.

When showed the picture of Golden Rice, respondents' immediate reactions are of doubt and amusement. Some of the statements are the following:

- "It looks like the color of honey"
- "The grains are longer compared to the white rice"
- "Maybe egg yolk was added"
- "It's the same as white rice, only not available here"

But after given an explanation on Golden Rice, respondents become more than willing to try eating the rice because according to them, Golden Rice do not differ from white rice in terms of taste and cooking process. The vitamin A content sparks positive reactions from the respondents. For example (Brgy. Pagsulhugon, Babatngon), someone jokingly uttered that "Golden Rice is already a complete meal, thus no need to eat viand anymore."

Before eating Golden Rice, respondents claim that they first need to know its taste, food safety, source, the process of cooking, and price. A farmer (Brgy. P. Barrantes, Alangalang) says that based on her limited knowledge, colored rice costs P105 a kilogram.

Meanwhile before planting Golden Rice, they primarily want to find out how long the new type of rice is grown, and how it is planted. Farmers also want to know Golden Rice's commercial viability, yield, fertilizer requirements, germination characteristics, and storage requirements.





## **Bukidnon Province**

### **Non-farming Households**

#### **A. On Rice/Food Choices**

Food purchased by respondents highly depends on their budget. Complete meals to consumer participants are squash, milk, vegetables, eggs and fish. However, children are coerced to eat vegetables, hence for Barangay 1 of Poblacion, sweet potato tops and hotdogs are served to encourage children to eat. Conversely Barangay 9 respondents avoid serving hotdogs as these are considered unhealthy. Other unhealthy foods identified are junk foods.

Time is a major factor for consumers in preparing food. Eggs and hotdogs, preferred by children, are common dishes in the morning, while vegetables and meat are served in the afternoon. Children do not like vegetables such as okra for its sliminess and ampalaya (bitter gourd) for its bitterness.

The non-farming or consumer groups are highly budget-conscious as compared to farming communities. However, in the same way for farmers, the food prepared and served for adults are similar to children. Differences lie in the preference of children. Children do not like eating vegetables while adults are encouraged to do so, with the exception of avoiding vegetables harmful to ailments such as legumes in the case of rheumatism.

The primary decision maker in the consumer household is the wife/mother since she is responsible for managing the budget. All respondents are open to trying new food types as long as it is affordable. In this case the budget remains the key factor in determining what food is served daily. Other considerations in trying new food types are taste, expiration date, health and nutritional benefits.

Most respondents cook rice three times per day, the amount of which will depend on the size of the family. The main measurement in preparing rice is called “salmon”. 2.25 salmon is equivalent to 1 kg of uncooked rice. In the case of a five to a nine-member family, between 1 to 1.25 kilos of rice is cooked daily. Approximately a saucerful per meal is allocated to children. Household pets are also included in the preparation of rice. Most respondents allocate leftovers for their pets.

Respondents commonly prefer rice of quality – tasty, aromatic and can be eaten on its own. Top of mind for quality rice is the 7-tonner which becomes fluffy and soft when cooked. Angelica rice is also considered premium rice for its fragrant characteristics. However, budget constrains them from purchasing these kinds of rice. As a result, most consumer respondents settle for NFA rice which is considered hard and requires a lot of water when cooked. The decision-maker for rice purchases remains primarily with the wife/mother. In some cases, the mother consults both husband/father and kids for their preference. Newly-weds make purchasing decisions together.

Top of mind on coloured rice is the red-tonner or dinorado. The red-tonner is considered nutritious with Vitamin B (to combat beri-beri) but expensive. Next to red-tonner, coloured rice is associated with yellow or brownish rice from NFA. This rice type is considered foul

smelling and old stock. It causes gas and stomach pains. Respondents avail of this rice offered by NFA only due to the recent rice crisis. However, given options and bigger budgets, consumer participants would prefer rice of better quality. Most respondents still prefer white colour since this is the colour they are used to, more so the preference of children.

## **B. On Knowledge and Attitudes on Diet and Nutrition**

The primary driver for diet and nutrition in the non-farming household is budget. The respondents' financial capacity determines what kind of food is served on the table. However, they are familiar with a healthy diet. Common across all barangay respondents to a healthy meal includes fruits and vegetables as these are readily available and inexpensive. Meat which is more costly than vegetables is consumed in fewer quantities.

There are no distinct differences in health concerns and food prepared for children, adults and pregnant women. Common concerns across all are to eat nutritious meals, be resistant to sicknesses and practice proper hygiene. Except for Barangay Casisang where a pregnant respondent was advised to minimize rice intake by doctors, possibly to avoid delivery complications.

Respondents are aware of the medical services available within their respective barangays. Most common services include immunization, dental for pregnant women, circumcision, distribution of vitamins from house to house and feeding programs carried out by the Barangay Nutrition Scholar. These services are primarily offered by the local municipality to which the barangay belongs. Frequency of these services differs per barangay subject to budget availability of the municipality. With respect to NGOs, only the Catholic and non-catholic missionaries are recalled by the respondents. Frequency of the services offered by these missionaries is irregular. Though most respondents are aware of the services, most did not comment on the effectiveness of the programs.

## **C. Information Sources**

Given the profile of the consumer respondents, most own a TV. As a result, TV is their primary medium for information especially those endorsed by Department of Health. Next to TV, another medium for information are the local city officials through the barangay health center or Barangay Health Worker. With respect to preferred medium, most consumer respondents would opt for seminars where credible medical professionals such as the Barangay Health Worker will provide lectures on food and nutrition.

Dominated by either ABS-CBN or GMA 7, all respondents recall TV advertisements such as Lactum and Knorr and TV programs such as "Wonder Mom" and "Salamat Doc". Most remembered are the food pyramid shown in Lactum and "Macaulay anggulay" in Knorr advertisements. It is important to note that women of the consumer group are more familiar with food and nutrition as well as the medical services offered by the barangays.

## **D. On Vitamin A Deficiency**

Except for Barangay 9, most participants did not respond when asked if they were familiar with Vitamin A Deficiency. A Barangay 1 participant responded that there is a vitamin A program within their barangay. When asked symptoms of Vitamin A deficiency, some

respondents associated this with the eyes, however lacked further information beyond the single response.

Health workers who were part of the respondents in Barangay 9 were very knowledgeable about VAD and provided more information on its effects on the eyes such as blurred vision. With respect to Vitamin A-enriched foods responses varied from malunggay (horseradish) to squash, followed by other yellow or orange fruits and vegetables. Most respondents believe Vitamin A-enriched foods are good for their health; however, their limited budget constrains them from consuming these foods on a daily basis.

All respondents are aware of the Patak Pinoy program offered by the local government units and distributed house to house. No other entities offer such kind of programs per FGD consumer group. Most of the respondents are aware this program benefits them; however some feel they lack information with respect to the benefits they gain from the program. As a result most cannot comment on the effectiveness of the service.

### **E. On Golden Rice**

For Barangays 9 and 1, yellow rice is associated primarily with NFA rice with iron, followed by rice with colouring and yellow corn. Other associations to yellow rice include Muslim yellow rice. For Barangay Casisang, most respondents showed no reaction or response when asked about their familiarity with yellow rice.

Most respondents are willing to try eating yellow rice as long as it is within their budget; it is available and is safe to eat. Those who showed apprehensions are worried over possible side effects such as headaches. Yellow rice continues to be associated with NFA rice and remains to have a negative impact with the respondents.

Majority of participants responded favourably to eating yellow rice with Vitamin A. Because the rice is enriched with Vitamin A, most will try to eat it as long as it fits their budget, it is edible, tasty and safe for the stomach. One respondent will not try because she is not familiar with the rice, while other participants feel the support and endorsement of the Department of Agriculture for the rice type is important.

There are mixed reactions amongst the groups on replacing white rice with yellow rice. Some support yellow rice by commenting that the vitamins it contains matter more than the colour of the rice. Others are reluctant to completely replace white rice since this is what they are used to eating on a daily basis. There are concerns over the price, with yellow rice perceived to be expensive. Barangay 1 participants suggest coursing this through NFA since they believe NFA to be the sole authority on rice.

All respondents reflected no reaction or no response to genetically-modified organism (GMO). It is assumed they are not familiar with GMO. However, GMO is associated with organic rice, heard over the radio, according to Barangay 9. On the other hand, Barangay 1 respondents have heard Catholic priests banning farming GMO products. On eating Golden Rice (GR) as a genetically-modified crop, all respondents are willing to eat Golden Rice since they believe the vitamins are more important than it being GMO or yellow. They believe Golden Rice will help add to their daily vitamin intake and avoid buying expensive Vitamin A-enriched foods. It is crucial to the respondents that the rice type be endorsed by the government and more so with a BFAD approval seal to indicate that it is safe to consume. Conclusively, all

respondents were less excited seeing the Golden Rice picture as opposed to the farming community. In addition, they showed no sign of familiarity over the mention of PhilRice in the GR description.

Across all barangays, the primary inquiry to Golden Rice is its price, whether consumers will be able to afford buying this type of rice frequently. Other inquiries following this are the effects GR will have on the body and whether it will have side effects when consumed. Some are further interested on why RC82 variety will be used given that it is premium and expensive. Further inquiries on whether it is already available in Bukidnon. Only one respondent in Barangay 1 requests more information as to why the Catholic Church banned GMOs.

## **Commercial Farmers**

### **A. On Rice Farming**

For all 3 sampled barangays representing commercial farming, the most common response is that rice farming is their main source of livelihood even since childhood. They have mentioned that their common problems are usually the financing cost of their operations, the low market value of their produce, occurrence of fungus and pest infestation / illness, and natural calamities.

During dry season, their preferred variety ranges from 128, 82, RC 10, 120, 140, M11; they prefer these varieties because of their shorter harvest period and resistance to illness or infestation. One respondent, an active partner of SEARICE, prefers self- owned seeds. One barangay, Sto. Nino, would be dependent on water rationing as they are irrigated so their choice of variety depends heavily on the schedule. This group also mentioned that although long grain varieties are expensive, they perform better.

During wet season, this group favors 7-tonner, RC18, 122, M69 or masipag variety, and M11. They mentioned that these varieties are strong-stemmed and resistant to illness. In Barangay Sinanglanan, it was mentioned that phased-out varieties such as IR64 and 36 were good performers with good eating quality but were less resistant to tungro.

When it comes to trying a new variety, this group would like to know the cropping period, level of resistance to wind and pests, eating quality, and profitability & yield. The more important or more consistent information required by these farmers across the 3 barangays would be the yield of the variety and the resistance to wind and pests. The common source of information about rice varieties that were mentioned by the farmers in this group would be the Department of Agriculture (DA) technicians. However, upon close inspection and research, these technicians are actually the City Agriculturists under the City Agriculture Office (CAO) of the local government unit (LGU) or city government and not under the DA, a national government agency. The CAO technicians have told us that this delineation is difficult to establish with the farmers, but it is common knowledge that they serve us the frontline when it comes to government coordination with the farmers. Furthermore, in Sinanglanan the respondents identified SEARICE and PDAP (NGOs) as his source of information for rice varieties as he claims to be an organic rice farmer; they did not identify a government office as their source of information.

When it comes to selection of rice variety, this group has a consensus that it is the one in charge of the farming operation who selects the rice. This may differ in terms of gender, because some respondents who operate their farm are the women. They choose mostly certified seeds from the government because of the better performance they have experienced and because of the less expensive price. They also seek good seeds from fellow farmers because of its lesser cost. Inbred seeds were also mentioned, but this is from Sinanglanan where SEARICE discussion was predominant.

The government has programs in these 3 barangays in supplying seeds, but they claim that it is not enough. These programs give seeds that are less expensive, and sometimes “buy one take one”.

Other crops such as vegetables (cassava, pepper, tomato), fruits (coconut, yam), and corn are planted in some areas. They are quite aware, as a group, of BT Corn. One respondent from Apo Macote (John) has a brother working in Syngenta and mentioned that BT Corn is packed with chemicals and dangerous but also mentioned that BT Corn is a household name in US and Australia. Another respondent from Sto. Nino who is an active partner of SEARICE (Weni) displayed some knowledge about BT Corn where it has a built in bacteria that protects corn from corn borers and falling grains. In Sinanglanan, they were told that BT Corn is banned by IPAR because it can cause long term damage if eaten by humans. Another NGO, Kaanib, was also mentioned in terms of warning against BT Corn. They also mentioned that these BT Corn seeds are from a Monsanto company. Respondents from Sinanglanan also mentioned that BT Corn is converted to RR or roundup-ready, and that one family who ate RR experienced diarrhea. The 3 barangays mentioned that BT corn is planted because of the lesser expense of having no chemicals used to maintain the cropping and because it can ward off thieves who may want safe-to-eat crops. They further mentioned hindrances to planting BT corn would include the high cost of the seeds, that it cannot be eaten even by animals (according to them via hearsay, a carabo died after eating BT corn), and that the Church advocates against BT Corn.

At an average, 10–30% of their harvest is kept for family use. Also at an average, 70% to 90% is of their harvest is sold.

## **B. On Rice/Food Choices**

All three commercial farming groups cited that budget is among the things they considered when it comes to the food of their children. They also mentioned the nutritional value of the food, that the food is safe to eat and the ease of the preparation of the food as things they consider for their children's food. They have the same considerations when it comes to adult's food, but they mentioned that adults eat more than children. It was also mentioned in one barangay (Sinanglanan) that adults tend to be more health conscious.

Rice consumption would depend on the family size, but the average rice prepared is 6 salmons (can of sardines) per day where  $\frac{1}{4}$  of the rice prepared is for children. They all mentioned that they cook rice 3x a day, but there are seldom times where it is cooked 2x a day (where bananas are served in breakfast). They noted that unconsumed rice is usually prepared for the next meal and is heated by placing it on top of newly cooked rice. They also mentioned that a good portion of their leftover rice is for their pet dogs.

The preferred type of rice is soft, white, and fragrant. One respondent mentioned that it has to be organic, and that same respondent was the same person who mentioned SEARICE in Sto. Nino. The type of rice prepared is decided by the wife or the one who prepares the meals. It was also in consensus that it is the wife who budgets the family's meals.

In trying out new food, the things they would want to know prior to trying are: nutritional value, price, source, and how it was made (i.e. if it were exposed to chemicals). One respondent from Sto. Nino who also mentioned SEARICE was adamant about not trying new foods but the others in her group were willing.

During the discussion about colored rice, the types mentioned were Vietnam rice, dinorado, red tonner, red rice, brown rice, black rice, and bahay (rice that has been stored for long periods and discolored). They all preferred white rice because of being accustomed to white rice. Some respondents mentioned that non-white rice can cause stomachaches sometimes, but a respondent from Sinanglanan mentioned that unpolished rice is healthier.

### **C. On Knowledge and Attitudes on Diet and Nutrition**

Examples of nutritious food given are fruits and vegetables, and it was also mentioned that nutritious foods are those that are mentioned in the Go Grow and Glo program of the government. Non-nutritious food includes junk foods and noodles, overcooked vegetables, instant foods, canned goods, and excessive meat.

When it comes to the health of their children, they consider the following: free from illness, regular supplements of vitamins, proper nourishment, fresh vegetables. For adult's health, they consider the regular intake of vitamins, free from vices such as smoking and drinking, and proper exercise. For mothers and pregnant women, they mentioned that it is important to have regular visits to the doctor or health center, eating right, eating lots of fruits and vegetables (vegetable soup for breastfeeding).

The group mentioned that the government has medical services in the area (e.g. circumcision, treatment for sismiasis, dental services, services for pregnant women, feeding programs, and the Vitamin A Patak Pinoy program was mentioned without prompting). They mentioned that these services were useful because they were free and scheduled. But being scheduled also meant that they are not always available. The only NGO program that they can identify was the family planning program done by a group of priests in Sto. Nino.

### **D. Information Sources**

The predominant sources of information about health and food that were mentioned were television, local radio, and the Barangay Health Workers. It was a cross between the Barangay Health Workers and television as the best among the sources. Television commercials were cited as the most effective advertisement on food and health, particularly Lactum and Makulay ang Buhay.

### **E. Vitamin A Deficiency**

One respondent from Apo Macote cited that her son has VAD, but all three groups mentioned that VAD has something to do with poor vision. Other symptoms that they mentioned were pale lower eyelid, several headaches, and weakness.

They mentioned that green leafy vegetables are sources of Vitamin A, as well as squash, eggs, yellow foods, papaya, and ampalaya. They cited reasons why they are not always consumed are budgetary reasons, availability or seasonality of the vegetables, and the lack of willingness to plant.

The Vitamin A Patak Pinoy Program is catered by all three groups through their BHW every 6 months.

## **F. On Golden Rice**

The unusual responses about yellow rice were that Cubans have been growing yellow rice since the eighties (from a respondent in Apo Macote who worked as a seaman and spent time in Cuba and Florida) as well as Golden Rice being provided by SEARICE (but this was later clarified as rice that had yellow or golden husks but white grains). They also associated yellow rice as being yellow corn. Also, a respondent also mentioned that Muslims serve yellow rice, but clarified it as rice with yellow coloring.

They claim that they will eat yellow rice provided it is safe to eat and will not cause stomachache. It was also mentioned that they will eat it if it has iron, like "Star rice". However, the respondent from Sto. Nino who spoke of SEARICE and use of organic farming has a negative perception about yellow rice, saying that she will not eat it if it is deadly. That same respondent stated that she will eat it only if it is locally made and approved by the DA. All groups said they are ok with yellow rice with Vitamin A, and a more positive attitude was noticed. Further, all groups felt that they will not get used to yellow rice being a regular staple food, but some said as long as it is good tasting and safe to eat they are ok with yellow rice.

The same respondent from Apo Macote who worked as a seaman mentioned that he read about Golden Rice, but could not provide any specific details. He further mentioned that golden rice is being grown in Nueva Ecija and Bulacan and that it is quite common in Cuba (where they mix it with kidney beans). On the discussion about GMO/GM Crops, he added GM crops are being studied in UP Los Banos and that some GM crops are being planted in southern Bukidnon in Kadilingan, but could not give any more info. Another respondent who claims prior knowledge about Golden Rice is the same respondent from Sto. Nino who spoke of SEARICE, and she claims that the Jack 5 variant from the President Roxas reserve is brown coloured and she added that GM crops harmful as per the NGO KANIB, and she fears side effects. Other respondents had no prior knowledge about golden rice but stated that GM crops are expensive and poisonous.

As consumers, they would try Golden Rice because it has vitamin A and as long as it is safe to eat. They want to know the price, how safe it is to eat, if it was sprayed with chemicals, and if it is safe for people who have illnesses (e.g. diabetes).

As producers/farmers, they would plant Golden Rice if there is a market for Golden Rice and because they are accustomed to trying new varieties. They would want to know the marketability, price of the inputs required, compatibility with their soil, if it will be promoted by the government/DA, farming requirements (e.g. does it require irrigation, planting method), yield per hectare, is it open to cross pollination, cropping period, resistance to pests and wind. They also mentioned that RC 82 is sickly and they are hoping that Golden Rice will have better feedback than BT Corn.

## **Subsistence Farmer**

### **A. On Rice Farming**

For all 3 sampled barangays representing non-commercial farming, the most common response is that rice farming is their main source of food and that it provides for their basic needs. They have mentioned that their common problems are usually the financing cost of their operations, occurrence of fungus and pest infestation / illness, and natural calamities.

During dry season, their preferred variety ranges from RC4, M52, B10 dry tonner, Bigante, Mestizo, dwarf or bordagol, and hybrid; they prefer these varieties because of their shorter harvest period and resistance to fungus and their higher market value.

During wet season, this group favors MTL, CC60, Angelica, and bordagol. They mentioned that these varieties are resistant to fungus, have high yield, and have good eating quality.

When it comes to trying a new variety, this group would like to know the price, the performance of the seeds, if it has good eating quality, and its resistance to pests and illness. The common source of information about rice varieties that were mentioned by the farmers in this group would be the Department of Agriculture (DA) technicians.

However, upon close inspection and research, these technicians are actually the City Agriculturists under the City Agriculture Office (CAO) of the local government unit (LGU) or city government and not under the DA, a national government agency. The CAO technicians have told us that this delineation is difficult to establish with the farmers, but it is common knowledge that they serve us the frontline when it comes to government coordination with the farmers. Furthermore, they also mentioned SEARICE as an NGO that provides seeds, and private companies such as Bayer, Bigante, and Pioneer, and local rice traders.

When it comes to selection of rice variety, this group has a consensus that it is usually the landowner who decides which variety to use or the tiller. This may differ in terms of gender, because some respondents who operate their farm are the women. In barangay Linabo, they mentioned that inbred seeds are good seeds, because they can be replanted and produce good results. This group mentioned that seeds from other farmers and from CAO are good seeds as well. The government has programs in these 3 barangays in supplying seeds.

Other crops such as vegetables (squash), fruits (banana), trees (gemelina) and corn are planted in some areas. They are quite aware, as a group, of BT Corn, and mentioned that it is bad for human beings. They see BT Corn and RR as the same, and were able to identify the characteristics of these corn variants (not safe to eat, resistant to corn borer, has genes of other organisms). However, they cannot mention the purpose of planting BT corn or RR, but they mentioned that it can serve as a deterrent for thieves. They mentioned that according to IPAR, eating RR is poisonous and some have said that eating animals that eat RR is also fatal.

At an average, almost 90% is kept for family use. Selling their harvest depends on the economic situation of their family, and depends on their amount of debt.



## **B. On Rice/Food Choices**

All three non-commercial farming groups cited that budget and nutritional value are among the things they considered when it comes to the food of their children, and if it were possible, they would only feed vegetables. They also mentioned that they consider the choices of their children, and they also prefer milled rice because it can make children full easily. They have the same considerations when it comes to adult's food, and no difference was given.

Rice consumption would depend on the family size, but the average rice prepared is 6 to 9 salmons (can of sardines) per day where  $\frac{1}{4}$  of the rice prepared is for children. They all mentioned that they cook rice 3x a day, but there are seldom times where it is cooked 2x a day (where bananas are served in breakfast). They also mentioned that a good portion of their leftover rice is for their pet dogs.

The preferred type of rice is fragrant, soft, and delicious and won't cause diarrhea. They mentioned that they consume that which is provided by the landowner from the harvest, or that they get to eat only that which is harvested. It was also in consensus that it is the wife who budgets the family's meals.

In trying out new food, the things they would want to know prior to trying are: safety. Not from China (melamine), has vitamins and minerals, and as long as it is not BT corn.

During the discussion about colored rice, one respondent from Linabo claimed that in Barangay Manabay, Ozamis City, preschoolers and their parents were given a free kilo of yellow rice by the Department of Education, and that it was delicious and had vitamin A. They also associated colored rice with red and black rice which can be fragrant but lacks taste and can cause stomach problems. They also mentioned red rice as being expensive. They prefer white rice and dinorado rice, but they also stated that it really depends on the variety and not the color.

## **C. On Knowledge and Attitudes on Diet and Nutrition**

Examples of nutritious food given were vegetables such as ampalaya. Non-nutritious food includes chayote and eggplant, canned goods, and junk food. When it comes to the health of their children, they consider the following: free from illness, personal hygiene, proper nourishment and vitamins, and enough sleep. For adult's health, they consider being free from vices such as smoking and drinking, and proper exercise and proper rest. For mothers and pregnant women, they mentioned that it is important to have regular visits to the doctor or health center, eating right, avoiding softdrinks, eating lots of fruits and vegetables (vegetable soup for breastfeeding), reduce sweets because it can cause high blood and results in difficult birthing, proper vitamins such as ferrous sulfate, and eating proper food for lactation (e.g. chicken with papaya soup).

The group mentioned that the government has medical services in the area (e.g. Mother's class, circumcision, treatment for sistomiasis, dental services, services for pregnant women, feeding programs, de-worming for children, and the Vitamin A Patak Pinoy program was mentioned without prompting). They mentioned that foreign missionaries conduct feeding programs and even provided free seeds, but they could not identify which groups or missionaries. They also mentioned that a dairy company gave guidelines on proper diet.

#### **D. Information Sources**

The predominant sources of information about health and food that were mentioned were the Barangay Health Center, the DA/CAO, television, local radio, and the

Barangay Nutrition Scholars. They consider the personal approach of the health workers/scholars/midwives as the best source of information. Television commercials were cited as the most effective advertisement on food and health, particularly Makulay ang Buhay, because people don't have to leave the house to be informed.

#### **E. On Vitamin A Deficiency**

Symptoms of vitamin A deficiency that they could identify are poor eyesight, weakening of the body, swelling, and pale colored skin.

They mentioned squash, malunggay, fish and milk, and ampalaya as sources of vitamin

A. They cited that vegetables are often consumed because available everywhere, but sometimes people don't eat squash because it looks like feces. They also mentioned that sometimes children favor other food items so vegetables are not served.

The Vitamin A Patak Pinoy Program is catered by all three groups through their BHW every 6 months. They mentioned that it would be better if adults were given as well. They cited that missionaries gave free vitamins and medicines but it was 3 years ago.

#### **F. On Golden Rice**

The respondent who mentioned yellow rice with vitamin A from Ozamis stated that this is the same as Golden Rice. However, some respondents associated yellow rice with spoiled rice, or bahay rice. One went so far as saying that colored rice is "enchanted food", which was supported by another member in the FGD. This traditional folklore belief can be a deterrent in the provision of Golden Rice.

They claim that they will eat yellow rice alternately with white rice, but they fear it might make their skin yellow. And they are worried it might cause stomach problems and might even have poison. They did not seem too eager to try yellow colored rice. When told it has vitamin A, they said they will try it first provided it is healthy and not harmful; they seemed more agreeable when Vitamin A was mentioned. A few respondents said they are willing to change yellow with white because of its vitamin A content, but most are only willing to try yellow rice mostly because of their fears that it might upset the stomach.

One response similar to the commercial farming group was that SEARICE provided Golden Rice, but they cannot identify the same except that the husk is yellow but the grain is white and that it is from Cotabato. Also, the respondent who mentioned yellow rice from Ozamis claims that this is the same as the ones distributed by the DepEd. One respondent also said that his neighbor who planted black rice seeds from Luzon had mentioned golden rice to him.

One respondent stated that his children suffered stomach ache after eating RR, which he identified as a GMO. Otherwise, no responses about GMO knowledge was provided.

As consumers, they would try Golden Rice if it is approved by the DA and because it has vitamin A. They also mentioned that it might also be the same as BT Corn. They want to

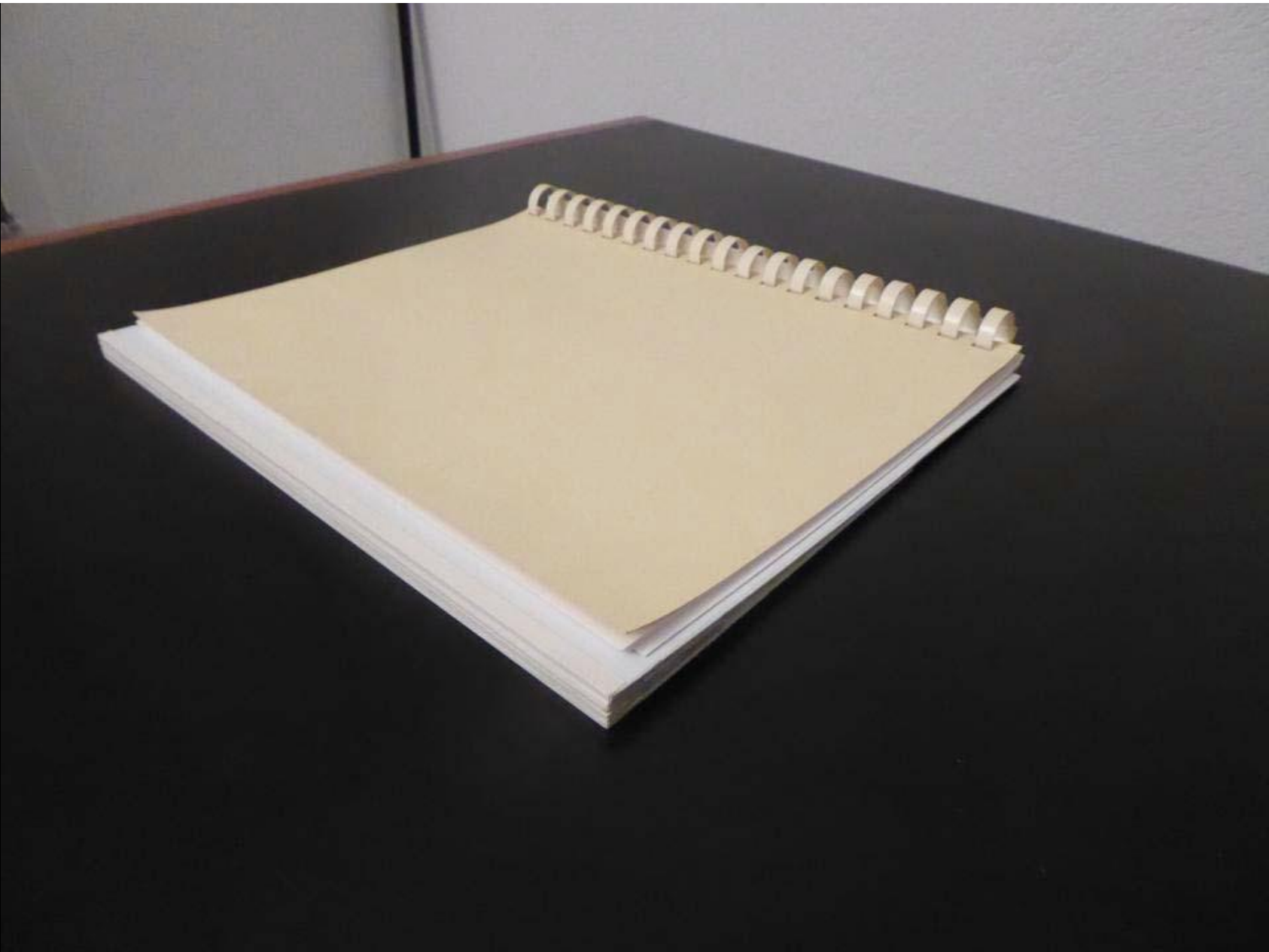
know the taste, price, if it is different from BT Corn, how safe it is to eat for pregnant women, if it was sprayed with chemicals, and if it is soft when cooked and how long it will stay soft.

As producers/farmers, they say they are willing to try Golden Rice. They would want to know the marketability (but are also doubtful of its market value being a GMO), pest and disease resistance, method of planting, price and availability of seeds, length of time to harvest, if 2nd generation can be replanted, and if it can be crossbred with black rice.

The 'story board' used by each of 4 AIM  
MBA student groups to conduct the  
structured interview 'Focus Groups'

Original artwork organised by IRRI

Photos by Adrian Dubock



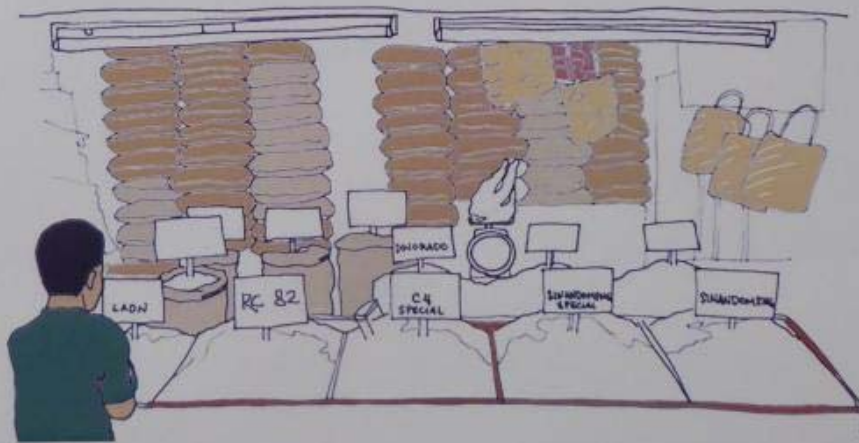


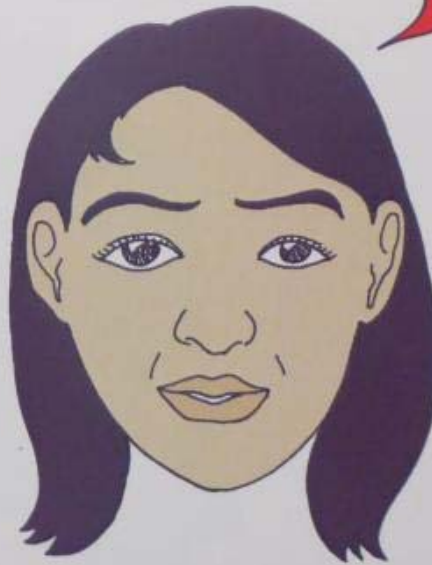










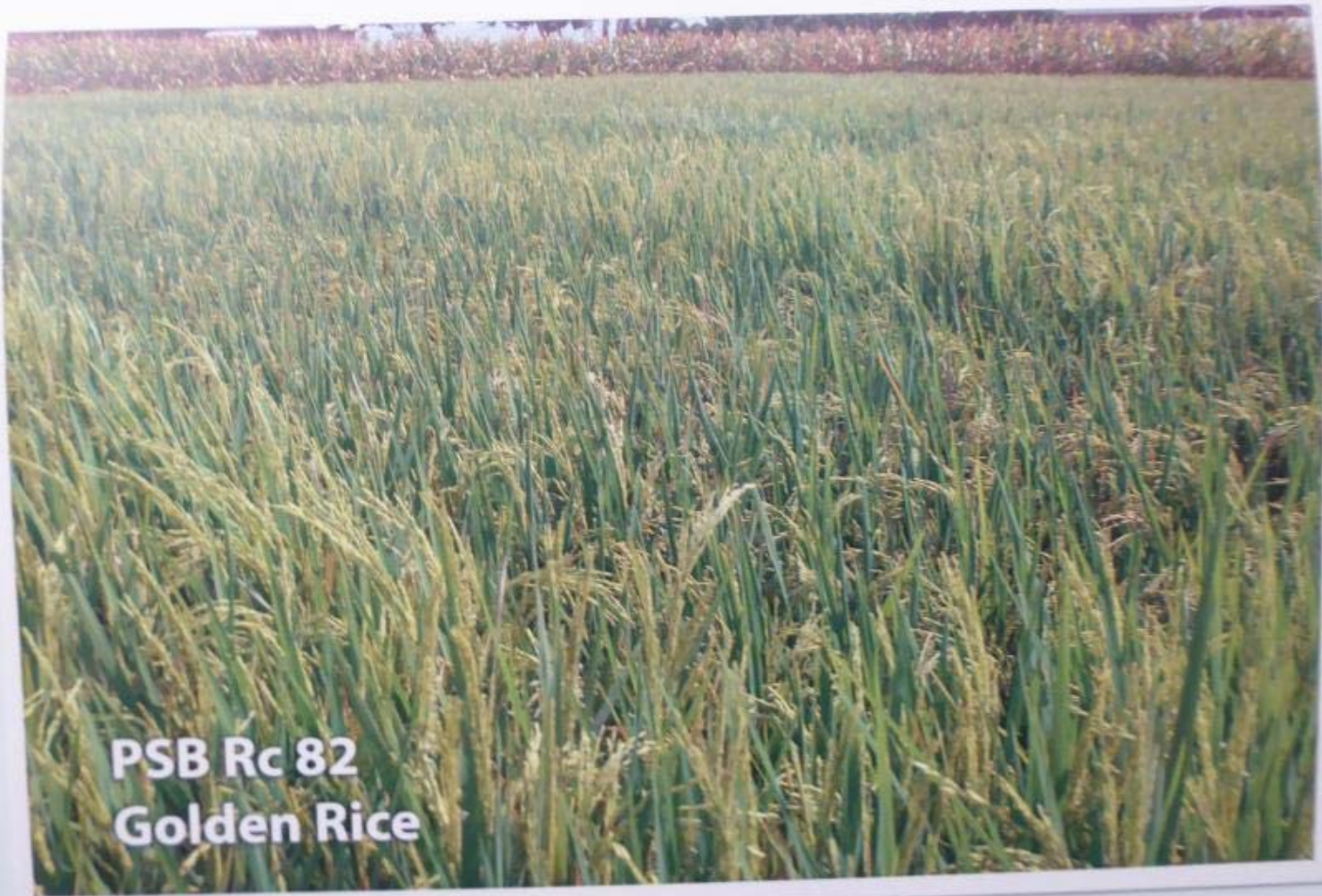












**PSB Rc 82**  
**Golden Rice**



