

Banana Farm Workers' Preference of an Access to Health Care and Education: A Conjoint Analysis

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Abstract

In lieu of a concrete living wage calculation for Kapatagan Banana Growers Cooperative (A Cavendish banana grower in Barangay Kapatagan, Digos City) in their conformance to the Rainforest Alliance Standard certification program, this study determined the farm workers' preference of an access to health care and education program. Conjoint analysis was used in determining the highly preferable attributes among 259 respondents. Through literature and farm records review, the four attributes are formulated: (1) frequency of medical mission, (2) health awareness topics, (3) provision of annual school supplies, and (4) educational information drives. The results revealed that the educational information drive has the highest utility value in which respondents prefer topics on climate change, carbon footprints reduction and waste management. The second variable with the highest utility value is the frequency of medical mission wherein respondents prefer to have it in a semi-annual basis. School supplies came out to be the third in rank (provision of writing materials and books) and the attribute on health awareness value (topics on AIDS/HIV, Tuberculosis and Hepatitis prevention) came out with the lowest utility. Based on the result, the study recommends that the issue on living wage shall not be taken by cooperatives or employers into something that is within the liability concept but rather a responsibility which involves continuous communication and immersion to come up with more appropriate services' attributes.

Keywords: living wage, access to health care and education, conjoint

1. Introduction

Like other laws and regulations, enforcement of the global living wage does not happen without the compulsion from government authorities and partnerships. Ideally, growth must be felt down to the grassroots level and the decent standard of living must be attained down to the bottom income-class level of the society. Becker and Stigler (1974) confirms that the aim of enforcement is to attain that desired degree of compliance with the rule of prescribed behaviour, and the critical reason that deters a society from enforcing "complete" compliance is that enforcement is costly. Furthermore, the minimum wage serves as the wage setting mechanism which addresses the price system that fails to work perfectly in labor market. The mandatory floor wage, for example, is one of the social protection policies clearly stipulated under the Labor Code of the Philippines. Almost half of the country's labor force is theoretically protected by law. Salary and wage workers comprise about 50 percent of the entire Philippine labor force, of which 40 percent are private sector workers and only 10 percent are public servants who are not covered by the minimum wage law (Hirose & Vitasa, 2007). The cooperatives allow farmers to establish a cohesive position which has strengthened their bargaining power with investors. Since cooperatives are regulated and well monitored in the Philippines, and, as formal representatives of a large number of individual farmers, with strong organizational structures, and collective assets, they can uphold living wage for the workers' family members.

Locally, an association of cavendish banana growers in Kapatagan, Digos City which is the Kapatagan Banana Growers Cooperative (KBGC), at the foothills of Mt. Apo, Philippines, has started to feel the pressures brought about by economic development and its associated problems such as increased population, waste, and pollution. The agribusiness partnership with growers in Kapatagan Banana Growers Cooperative (KBGC) has contributed to the creation of formal wage employment. However, the compliance with the minimum wage law for the members and sub-members has been a challenge for the past three years. The challenge has compounded when

the concept on global living wage was introduced as one of the important criteria in their market-driven certification standards. According to the Sustainable Agricultural Network (SAN) Standards (2017), “living wage is the remuneration received for a standard of 48 hours workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family.” The elements of a decent standard of living include food, housing, education, health care, water, transport, clothing, other essential needs including provision for emergencies and unexpected events. However, it has been noted that the implementation of this approach is challenging because it is perceived to be complicated in the context of the developing countries like the Philippines (Hirose & Vitasa, 2007). In view of the limited empirical and documented evidence of the identification of needs pertaining to living wage, there is, thus, a need to assess the optimal preference of banana workers’ access to health and care education.

Even the government has multiple difficulties associated with designing a system to monitor labor standards (Moran, 2005), such as: Problems with defining the specific obligations of countries needed to comply with a core labor standard; Problems with identifying indicators of compliance or noncompliance with each core labor standard; Problems associated with the sources of information; and How to make appropriate inferences from raw data. This scenario generated the so-called “institutional void”. It is a result of the breakdown of markets and governance which creates a gap between sellers and buyers that can be addressed by incurring high transaction costs. Likewise, the agriculture sector, for example, remains of critical significance for rural development and social protection.

Moreover, if the agricultural sector remains to be reliant with the Government, the institutional void will not be resolved. In view of this, this study attempted to address market and institutional failures by providing access to information, know-how & technology, all in order to lower the transaction costs in the production of the final good and be competitive in end markets.

A sustainable business or enterprise shall go beyond compliance. In the same manner, a sustainable business case and a sustainable earning model can be linked most easily when they are supported by a societal trend (Tulder, 2018). In this way, addressing societal problems forms the basis of enterprise strategy which is a real source of inspiration for innovative products and services. Part of the strategy shall take part in the 17 agenda of Sustainable Development Goals (SDG) which was introduced by the United Nations last September 25, 2015. The specific agenda such as (3) Good health and well-being; and (4) Quality education form part the essential needs for workers and their families. In developing countries like the Philippines, the development goals primarily include the attainment of inclusive growth in tackling the issue of underdevelopment.

The four phases of sustainability (Tulder, 2010), guided KBGC to take a proactive stance in addressing living wage concerns. Figure 1 highlights the 4 phases (inactive, reactive, active, and proactive) which present a combination of two key behavioural dimensions: societal responsiveness and fundamental attitudes to society and societal issues. Theoretically speaking, KBGC is still in the inactive phase wherein societal issues confronting the cooperative are recognized. The mere compliance with management systems (i.e., Rainforest Alliance) because customers require it manifests the position of the KBGC in the active phase. Only when the intrinsic motivation of KBGC is directed towards taking responsibility for sustainability can uphold exploiting the full value of sustainability. By doing so, the lead firms, the cooperative, and the farmers aim to take shared responsibility for solving societal problems, thereby, reaching the proactive phase of sustainability.

		Basic Attitude			
		Liability		Responsibility	
Societal Responsiveness	Intrinsic	1. Inactive		3. Active	
	Mixed				4. Proactive
	Extrinsic		2. Reactive		

Figure 1. Phase Model of Sustainable Development (Van Tulder, 2010)

2. Method

2.1 Study Participants

The participants of this study are the field workers of the KBGC. These workers represent the voice of the

primary stakeholders who raised issues pertaining to environmental, social, and health aspects during industry stakeholders’ meeting conducted in Barangay Kapatagan last October 10, 2016 (see Annex 2). This study applies a client-centered approach in identifying and analyzing socially relevant issues and needs. In the aspect of health, for example, providers must provide health services that best suit their clients. They must not assume that they are the experts in health but must consider the preferences and concerns of their clients (Lacuesta, 2003). Hence, the banana farm workers’ preference of an access to health care and education confirms to the client-centered approach as a vital component in proactive phase to sustainability.

2.2 Sampling Procedures

The conduct of the survey employed simple random sampling wherein every worker from the total population has equal chances of being chosen for the study. The sample size of the study is 259, which was determined based on the population size of the total workforce.

2.3 Research Design

This study employed quantitative components of research wherein it applied descriptive and explanatory design. Also, the triangulation method was employed as the data were obtained from workers and the related literature review that may support the research findings.

Through literature review, the researcher collected data and information regarding predetermined factors or attributes pertaining to workers’ preference in terms of access to health care and education. This was validated during a Key Informant Interview (KII) to the selected field workers who are: at least 5 years in the cooperative.

2.4 Statistical Tool

Conjoint Analysis was used in determining the highly preferable attributes of an access to health care and education. It is a rigorous method of eliciting preferences. It allows estimation of the relative importance of different aspects of care and the total satisfaction that respondents derive from healthcare services (Ryan, McIntosh, Shackley, 1998). In this study, the first step was on designing the stimuli carried out through literature and farm records review. These are supported by some related literatures as summarized in Table 1.

Table 1. Correspondence of Attributes and Related References (See Annex 1)

Attribute	Highlights	References
Medical Mission	<ul style="list-style-type: none"> • <i>Medical mission is cost effective.</i> • <i>It is a means to partnership and long term sustainability</i> • <i>Partnership is the key to improve medical missions.</i> 	<ul style="list-style-type: none"> • Tadisina, K.K., Chopra, K., Tangredi, J., Thomson, J.G., & Singh, D. P. (2014) • Melby, M.K., Loh, L.C., Evert, J., Prater, C., Lin, H.; Khan, O.A. (2016) • Martiniuk, A. L., Manouchehrian, M., Negin, J.A., Zwi, A.B. (2012)
Health Awareness	<p><i>AIDS-HIV and Family Planning</i></p> <ul style="list-style-type: none"> • <i>Adolescents are still wanting of health services that will address their reproductive health needs.</i> • <i>Pre-marital sex was identified as the third most common problem.</i> • <i>DIGOS CITY -- The City Health Office (CHO) here alerted its residents after the City reached the Category B status in the human .</i> <p><i>Hepatitis B and PTB-DOTS</i></p> <ul style="list-style-type: none"> • <i>In Davao Region, tuberculosis still remains as one of the top leading causes of illnesses and deaths based on the Regional Health Information System (RHSIS)</i> • <i>While the region achieved the target set for tuberculosis (TB) incidence in 2012, the number of new cases has increased every year since and resulted in failure to meet the target in 2015</i> 	<ul style="list-style-type: none"> • Health Research Topics in Region XI (Digos City) 2005-2010 • Dinoy, O.B. (2019, January 3). Digos City reaches category B in HIV-Aids. SunStar Davao • Regional Unified Health Research Agenda (2017-2022)
School Supplies provision	<ul style="list-style-type: none"> • <i>Developing countries spend hundreds of billions of dollars each year on schools, educational materials and teachers, but relatively little is known about how effective</i> 	<ul style="list-style-type: none"> • Glewwe, P. W., Hanushek, E.A., Humpage, S.D., Ravina, R., Glewwe, P.

Information Drive (Environmental Aspects)	<p><i>these expenditures are at increasing students' years of completed schooling and, more importantly, the skills that they learn while in school.</i></p> <ul style="list-style-type: none"> • <i>A well funded primary school provides textbook and other school supplies inside the classroom</i> • <i>In many instances attempts to improve the quality of education falter in the absence of even the most basic instructional materials and supplies.</i> 	<p>(2013)</p> <ul style="list-style-type: none"> • Eisemon, T.O. (1988) • Johnson, D. (2008)
	<ul style="list-style-type: none"> • <i>Findings on the hazardous effects of pesticide exposure on animals, plants and vegetation as well are consistent with previous international and local studies such that of Dr. Romeo Quijano.</i> <p>Note: See Annex 2</p>	<ul style="list-style-type: none"> • Estrada, M.D. (2006) • Banana Industry Stakeholders' Meeting (2016)

Consequently, Table 2 presents the four attributes such as Frequency of medical mission, Health awareness topics, Annual school supplies, Annual educational information drives with corresponding two levels.

Table 2. Designing the Stimuli

Attributes	Levels
Frequency of medical mission	<ul style="list-style-type: none"> ○ Semi-annual (every 6 months) ○ Annual
Health awareness topics	<ul style="list-style-type: none"> ○ Hepatitis B and PTB-DOTS ○ AIDS-HIV and Family Planning
Annual School supplies	<ul style="list-style-type: none"> ○ Writing materials and books ○ School uniform and shoes
Annual Information Drive topics	<ul style="list-style-type: none"> ○ Climate Change ○ Ecosystem Conservation

2.5 Materials and Instrument

In this study, there are 4 attributes and for each attribute there are 2 levels. Hence, the full factorial design would have (2 x 2 x 2 x 2) 16 combinations. However, through the aid of computer program, these combinations were further reduced into 12 profiles used for defining a subset of stimuli for evaluation. Ranking of the profiles (1 as the most preferred and 12 as the least preferred) by the respondents was conducted in a massive survey process. Sample profiles are shown in Table 3.

Table 3. Sample profiles

Design Rank: _____	1	Design Rank: _____	2
Frequency : Annual		Frequency : Annual	
Awareness : AIDS-HIV, Family Planning		Awareness : AIDS-HIV, Family Planning	
School_supplies: Writing materials & books		School_supplies: School Uniform & shoes	
Information_drive : Ecosystem conservation		Information_drive : Climate change	
Design Rank: _____	3	Design Rank: _____	4
Frequency : Annual		Frequency : Semi-annual	
Awareness : Hepatitis B, PTB DOTS		Awareness : AIDS-HIV, Family Planning	
School_supplies :Writing materials & books		School_supplies: Writing materials & books	
Information_drive : Climate change		Information_drive:Ecosystem conservation	

Data coming from the conjoint experiment was processed using SPSS 20 (Trial Version). Traditional conjoint analysis was then performed to determine how important the different factors are in the decision making process of the respondents, appraise the utility measures of each factor levels, and simulate which combination of factors yield the best preferences for the workers.

3. Results

Presented in table 4 is the relative importance rating of all the respondents on the four attributes. The range of the utility values (highest to lowest) for each factor provides a measure of how important the factor was to overall preference. Factors with greater utility ranges play a more significant role than those with smaller ranges (SPSS

Conjoint, 2014).

Surprisingly, the attribute with highest utility is Information Drive. This attribute has two levels (Climate Change and Ecosystem Conservation), followed by Frequency of medical mission, school supplies and awareness. The Conjoint Analysis revealed that the information drive has the highest utility value of 27.099. Here, respondents prefer topics on climate change, which simply means that the care for the environment, especially on the topics of carbon footprints reduction and waste management are being taken into consideration.

Table 4. Average Importance Score

Attributes	
Health Awareness	22.812
School supplies	24.271
Education Information drive	27.099
Frequency of Medical Mission	25.819

The second variable with the highest utility value is the frequency of medical mission or in which respondents prefer that the medical mission being done in a semi-annual basis. School supplies comes out to be third in rank in terms of utility value, with respondents preferred writing materials and books with a total utility value of 24.271. In this case, farm workers are putting more emphasis on their child's educational materials directly attributable to classroom learning and studying. Moreover, health awareness comes out with the lowest utility value of 22.812. This may imply that farm workers are not taking health awareness as an issue because the topics on AIDS/HIV prevention and Hepatitis or PTB DOTS are not socially relevant in their context.

Presented in table 5 is the specified utility of each level of the four attributes. Higher utility values indicate a greater preference and lower values for lower utility. Respondents highly preferred a health awareness program on hepatitis and PTB DOTS, writing materials and books as educational supplies, climate change as an information drive, and a semi-annual frequency of medical mission.

Table 5. Utilities of the attributes

		Utility Estimate	Std. Error
Awareness	hepatitis_PTB DOTS	.017	.145
	AIDS-HIV and Family Planning	-.017	.145
School Supplies	Writing_materials and books	.226	.145
	School_uniform and shoes	-.226	.145
Information_drive	Climate_change	.112	.145
	Ecosystem conservation	-.112	.145
Frequency	Semi-annual	-.271	.291
	Annual	-.543	.582
(Constant)		4.901	.460

Table 6 presents the simulation of all the profiles of a health and education programs. Based from the simulation, a highly preferred access to health care and education design has an health awareness session on hepatitis B and PTB DOTS, provision of writing materials and books as educational supplies, information drive on climate change, and a semi-annual medical mission. This design has a total utility of 0.084. The combination with the lowest utility is design with awareness sessions on hepatitis B and PTB DOTS, provision of school uniform and shoes, information drive on ecosystem conservation, and annual medical mission with a total utility of -0.864.

Table 6. Total Utility Simulation

Awareness	School_supplies	Information_drive	frequency	Total Utility
AIDS-HIV and Family Planning	writing_materials and books	ecosystem_conservation	Annual	-0.446
AIDS-HIV and Family Planning	school_uniform and shoes	climate_change	Annual	-0.674
hepatitisB_PT B DOTS	writing_materials and books	climate_change	Annual	-0.188
AIDS-HIV and Family Planning	writing_materials and books	ecosystem_conservation	Semi-annual	-0.174
hepatitisB_PT B DOTS	writing_materials and books	climate_change	Semi-annual	0.084
hepatitisB_PT B DOTS	school_uniform and shoes	ecosystem_conservation	Semi-annual	-0.592
AIDS-HIV and Family Planning	school_uniform and shoes	climate_change	Semi-annual	-0.674
hepatitisB_PT B DOTS	school_uniform and shoes	ecosystem_conservation	Annual	-0.864
hepatitisB_PT B DOTS	writing_materials and books	ecosystem_conservation	Annual	-0.412
hepatitisB_PT B DOTS	school_uniform and shoes	climate_change	Annual	-0.64
hepatitisB_PT B DOTS	school_uniform and shoes	climate_change	Semi-annual	-0.368
AIDS-HIV and Family Planning	school_uniform and shoes	ecosystem_conservation	Semi-annual	-0.626

Table 7 displays the result of the reversals. The study specified frequency of medical mission as in linear models. This means that respondents are expected to choose a level where a medical mission is to be conducted annually or semi-annual. However, the reversals show that 45 percent of the respondents preferred an annual medical mission. It is suspected that that these group of farm owners are not merely particular on the issue of frequency of medical mission.

Table 7. Reversals

Factor	
Frequency	110
Information drive	0
School Supplies	0
Awareness	0

Table 8 displays two statistics, Pearson’s *R* and Kendall’s tau, which provide measures of the correlation between the observed and estimated preferences. The table also displays Kendall’s tau for just the holdout profiles. Remember that the holdout profiles (four in the present example) were rated by the subjects but not used by the conjoint procedure for estimating utilities.

Table 8. Correlations

	Value	Sig.
Pearson's R	.751	.016
Kendall's tau	.500	.042
Kendall's tau for Holdouts	-.333	.248

a. Correlations between observed and estimated preferences

Instead, the conjoint procedure computes correlations between the observed and predicted rank orders for these profiles as a check on the validity of the utilities. In many conjoint analyses, the number of parameters is close to the number of profiles rated, which will artificially inflate the correlation between observed and estimated scores. In these cases, the correlations for the holdout profiles may give a better indication of the fit of the model (SPSS Conjoint, 2005)

Based on the “Phase Model of Sustainable Development” (Van Tulder, 2010), the findings have provided some perspectives on KBGC’s transition to sustainability. It highlights the crucial steps involved from the “active” phase (taking responsibility for societal issues by maintaining the Rainforest Alliance certification) to the “proactive” phase (externally oriented and aims to take shared responsibility for solving societal problems). Since the goal in a proactive phase is to involve both primary and secondary stakeholders in sustainability strategy, the identified attributes of the study such as Frequency of medical mission; Health awareness topics; Annual school supplies; and Annual Information drive topics provide an opportunity to demonstrate partnership and collaboration.

Finally, in the banana industry, for example, KBGC can use the findings of the study to engage with different partners to address related risks such as: Labor and working conditions, Environmental risks, Community, Health, and Security Risks. The identified attributes and levels in the study resemble the “list of wants” of KBGC which calls on stakeholders to work with them on solutions to these problems.

4. Discussion

The result of the Conjoint Analysis revealed that the attributes with the highest relative importance is information drive, followed by frequency of medical mission, provision of school supplies, and conduct of awareness program. Furthermore, the model simulation revealed that the optimal combination that represents the farm workers’ preference involves: Health awareness on hepatitis B and PTB DOTS; Provision of school supplies such as books and writing materials; Information drive on climate change; and a semi-annual (every 6 months) medical mission.

Per identified optimal set of preferences, it is suspected that over the years, the farm workers have felt the need to be educated about climate change and workers’ health and welfare from the experiences gained in fulfilling the rigorous environmental and social standards set by the certification requirements of Rainforest Alliance (RA).

Hence, apart from gaining leverage on addressing the demands of RA certification requirements, the result of the study presents an opportunity to KBGC on how to transition from its current active phase to the proactive phase of sustainability. The identified attributes (information drive, frequency of medical mission, provision of school supplies and conduct of awareness program) shall not be taken into something that is within the liability concept. Instead, the cooperative shall uphold the value of responsibility to gain a proactive stance in achieving sustainability. Further, similar study and method should be conducted especially to other industries. A Key Informant Interview or Focus Group Discussion shall be employed to come up with a strong and scholarly set of product or services’ attributes concerning primary and secondary stakeholders.

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ANNEX 1

The Attributes and the Corresponding Related Literatures

Attributes	RRL	References
Frequency of medical mission	It is cost effective. Humanitarian missions to LMICs are commonplace, but few exclusively hand surgery missions have been reported and none have attempted to demonstrate their cost-effectiveness. We present the first study evaluating the cost-effectiveness of a humanitarian hand surgery mission to Honduras as a method of reducing the global burden of surgically treatable disease.	Tadisina, K.K., Chopra, K., Tangredi, J., Thomson, J.G., & Singh, D. P. (2014). Helping Hands: A Cost-Effectiveness Study of a Humanitarian Hand Surgery Mission. <i>Plastic Surgery International</i> , (4). doi.10.1155/2014/921625
	Medical mission a means to partnership. Growing out of the “medical missions” tradition, contemporary participation continues to evolve. Ethical concerns and other disciplinary approaches, such as public health and anthropology, can be incorporated to increase effectiveness and sustainability, and to	Melby, M.K., Loh, L.C., Evert, J., Prater, C., Lin, H.; Khan, O.A. (2016). Beyond Medical “Missions” to Impact-Driven Short-Term Experiences in Global Health (STEGHs): Ethical Principles to Optimize Community Benefit and Learner Experience. <i>Academic Medicine</i> , (6)

Attributes	RRL	References
	<p>shift the culture of STEGHs from focusing on trainees and their home institutions to also considering benefits in host communities and nurturing partnerships.</p> <p>The authors propose four core principles to guide ethical development of educational STEGHs: (1) skills building in cross-cultural effectiveness and cultural humility, (2) bidirectional participatory relationships, (3) local capacity building, and (4) long-term sustainability.</p>	<p>91,633-638. doi.org/10.1097/ACM.0000000000001009</p>
	<p>Partnership is the key to improve medical missions. Based on the articles reviewed, there is significant scope for improvement in mission planning, monitoring and evaluation as well as global and/or national policies regarding foreign medical missions. To promote optimum performance by mission staff, training in such areas as cross-cultural communication and contextual realities of mission sites should be provided. With the large number of missions conducted worldwide, efforts to ensure efficacy, harmonisation with existing government programming and transparency are needed.</p>	<p>Martiniuk, A. L., Manouchehrian, M., Negin, J.A., Zwi, A.B. (2012). Brain Gains: a literature review of medical missions to low and middle-income countries. <i>BMC Health Services Research</i>. doi.org/10.1186/1472-6963-12-134</p>
	<p>It is a humanitarian action.</p> <p>A total of 278 returns were valid for analysis. Among them, 222 respondents reported that they had participated in just one overseas medical mission (79.9%). The majority of physicians, pharmacists, and nurses listed humanitarianism as their foremost incentive for participation.</p>	<p>Chiu, Y., Weng, Y.Ho, Chen, C.F. (2012). Perceptions and Efficiency of Short-Term Medical Aid Missions Among Key Groups of Health Professionals. doi.org/10.1177/0163278712461503</p>
	<p>During the 1990s, conjoint analysis was developed to elicit patients' and the community's views on health care.</p>	<p>Ryan, M. (2000). Using conjoint analysis to elicit preferences for health care. doi: https://doi.org/10.1136/bmj.320.7248.1530</p>
	<p>This paper adds to an increasing literature on methodological questions addressed in the application of conjoint analysis (CA) in health care. In addition, individual preferences were found to be determined by experiences, which raise potentially important questions regarding the elicitation and use of such preferences in economic evaluation.</p>	<p>Ryan, M., McIntosh, E., Shackley, P. (1998). Methodological issues in the application of conjoint analysis in health care. doi.org/10.1002/(SICI)1099-1050(199806)7:4<373::AID-HEC348>3.0.CO;2-J</p>
	<p>By using conjoint analysis to analyze new combinations of attributes, we found that respondents would most prefer instant, highly accurate home tests, even though they are not currently available in the U.S. Respondents were willing to pay \$39 for a highly accurate, instant home test.</p>	<p>Phillips, K.A., Maddala, T., Johnson, F.R. (2002). Measuring Preferences for Health Care Interventions Using Conjoint Analysis: An Application to HIV Testing. <i>Health Services Research</i>. Wiley Online Services. doi.org/10.1111/1475-6773.01115</p>
<p>Health awareness topics</p>	<p>AIDS-HIV and Family Planning</p> <ul style="list-style-type: none"> • Adolescents are still wanting of health services that will address their reproductive health needs. • In a recent study conducted in Digos City, it was noted that the adolescents expressed their need for holistic reproductive health services for the youth in their barangays. They revealed that they were aware of the common issues and concerns being confronted by their peers such as substance abuse (smoking, drinking and drug addiction), pre-marital sex, early marriages, abortion, sexually transmitted infections and others. • Pre-marital sex was identified as the third most common problem. They were also aware of the reproductive health services provided by the government health facilities. Some of them have availed of the services of the public facilities but complained about the poor accommodation, presence of “palakasan” or favoritism, and inadequacy of supplies and facilities. Thus, reproductive health remains a top priority research area, aiming specifically on adolescents and indigenous peoples’ health concerns – a topic that is seen as seldom researched, 	<p>Health Research Topics in Region XI (Digos City) 2005-2010. Retrieved from http://www.healthresearch.ph/index.php/about-pnhrs/downloads/category/51-2006-2010?download=277:nuhra-region11-agenda</p>
	<p>○ Ene 3, 2019 - <i>DIGOS CITY</i> -- The <i>City Health</i> Office (CHO) here alerted its residents after the <i>City</i> reached the Category B status in the human .</p>	<p>Dinoy, O.B. (2019, January 3). Digos City reaches category B in HIV-Aids. <i>SunStar Davao</i></p>
	<p>Hepatitis B and PTB-DOTS Tuberculosis The incidence of tuberculosis in the country remains as one of the highest in the world, with 75 Filipinos dying daily from the disease. In Davao Region, tuberculosis still remains as one of the top leading causes of illnesses and deaths based on the Regional Health Information System (RHSIS) statistical data on morbidity and</p>	<p>Health Research Topics in Region XI (Digos City) 2005-2010. Retrieved from http://www.healthresearch.ph/index.php/about-pnhrs/downloads/category/51-2006-2010?download=277:nuhra-region11-agenda</p>

Attributes	RRL	References
	<p>mortality from 1990 to 2004. It ranked among the top five in the early 90's and subsequently fell to rank 8th and 6th respectively with the implementation of the passive case finding utilizing the Directly Observed Treatment Short Course Strategy (DOTS) since 1999 up to the present. The DOTS or "Tutok Gamutan" Strategy was funded by the World Health Organization, CIDAFunded World Vision Development Foundation, and the Australian Aid. With the advent of DOTS, an increasing trend in the case detection rate and cure rate has been observed from 1999 to 2004, however, the rates were still below the performance standards of 77% and 85% respectively.</p>	
	<p>While the region achieved the target set for tuberculosis (TB) incidence in 2012, the number of new cases has increased every year since and resulted in failure to meet the target in 2015 (Department of Health Regional Office XI, 2017). While the prevalence of HIV or acquired immunodeficiency syndrome (AIDS) is well within the national target, the incidence rate increased from 403 in 2014 to 448 in 2015. As of February 2017, Davao ranks fifth nationally among regions with the highest percentage of newly diagnosed HIV/AIDS cases (Department of Health, 2017). Research efforts should aim to address various issues related to HIV, dengue, and TB. Specific research topics include: a. HIV b. Dengue c. Drug adherence for TB and HIV</p>	<p>Regional Unified Health Research Agenda (2017-2022). Retrieved from file:///C:/Users/fmanayan/Downloads/ruhra_region%20xi%202017-2022.pdf</p>
<p>Annual School supplies</p>	<p>o Writing materials and books & School Uniform and Books Developing countries spend hundreds of billions of dollars each year on schools, educational materials and teachers, but relatively little is known about how effective these expenditures are at increasing students' years of completed schooling and, more importantly, the skills that they learn while in school. The few variables that do have significant effects - e.g. availability of desks, teacher knowledge of the subjects they teach, and teacher absence - are not particularly surprising and thus provide little guidance for future policies and programs.</p>	<p>Glewwe, P. W., Hanushek, E.A., Humpage, S.D., Ravina, R., Glewwe, P. (2013). School resources and educational outcomes in developing countries: A review of the literature from 1990 to 2010. Education Policy in Developing Countries, Chicago: University of Chicago Press, 13-64.</p>
	<p>A well funded primary school provides textbook and other school supplies inside the classroom and the child will share it with another student.</p>	<p>Eisemon, T.O. (1988). Benefiting from basic education, school quality and literacy in Kenya. McGill University, Montreal Canada. Pergamon Comparative and International Education Service.</p>
	<p>Ensuring the availability of essential inputs. Few schools have the inputs necessary for effective instruction, thus limiting the scope for improvements in classroom processes. In many instances attempts to improve the quality of education falter in the absence of even the most basic instructional materials and supplies.</p>	<p>Johnson, D. (2008). The Changing Landscape of Education in Africa – quality, equality and democracy. Oxford Studies in Comparative Education. Cambridge University Press, United Kingdom.</p>
<p>Annual Information Drive topics (Environmental)</p>	<p>Ecosystem Conservation o These findings on the hazardous effects of pesticide exposure on animals, plants and vegetation as well are consistent with previous international and local studies such that of Dr. Romeo Quijano and the subsequent study done by Drs. Rodney Fernandez, Gene Alzona Nisperos, and Pamela Claveria on the "Health Effects of Pesticides on the Village of Kamukhaan" in Digos, Davao del Sur, which documented cases of suspected pesticide poisoning not just on humans, but also on animals, and vegetation.</p>	<p>Estrada, M.D. (2006). Health and Environmental Conditions of People Living in the Three Communities of Davao City Where Aerial Spraying of Pesticides is a Common Practice" Barangays Sirib and Dacudao, Calinan District and Sitio Coog, Mandug, Buhangin District Davao City A Study Conducted by Kalusugan Alang sa Bayan, Inc. (KAABAY) in partnership with Interface Development Interventions (IDIS) Retrieved from: http://idisphil.org/wp-content/uploads/2015/02/Kaabay-Health-study.pdf</p>
	<p>Oct. 10, 2016 I. Agenda: 1. Environmental Issues on Banana Farming within Mt. Apo National Park a. Encroachment into strictly prohibited areas b. Tree planting/Buffer zones/ tree nursery establishment c. Waste management 2. Social and Health Issues a. Labor issues b. Social benefits (Philhealth, SSS, Pag-ibig) c. Health d. Safety at work e. Chemical handling f. Farm materials</p>	<p>Kapatagan Banana Growers. (2016, October 10). Banana Industry Stakeholders' Meeting. Barangay Kapatagan, Digos City</p>

Attributes	RRL	References
	g. Pole vaulting / Price war h. Multi-Agency monitoring - Presented the overview of the problem: o Problem on Waste management: The volume of wastes has increased. The dump trucks that collect the waste cannot handle anymore the wastes generated per week. - Problem on disposal to nearby water body <ul style="list-style-type: none"> • The river has become the general outlet for all farm wastes coming from Dizon Farms, KBGC, Musahamat, etc. • Kapatagan Stakeholders need to plant more trees. • Not all farms have the functional “Waste Treatment Facility”/ 	
	Climate Change <ul style="list-style-type: none"> o Climate change and disaster risk reduction management o In 2012, 24 notable incidents of typhoon were recorded which affected 4.3 million people in the region (UNOCHA, 2017). Research efforts should aim to address issues on health service delivery during disasters, food preparations for emergencies, etc. Specific research topics include: a. Global warming b. Nutrition in emergencies c. Alternative foods during emergencies d. Inclusion and strict implementation of minimum initial service package in the local disaster risk reduction and management plan e. Disaster nutrition 	Regional Unified Health Research Agenda (2017-2022) file:///C:/Users/fmanayan/Downloads/ruhra_region%20xi%202017-2022.pdf

ANNEX 2

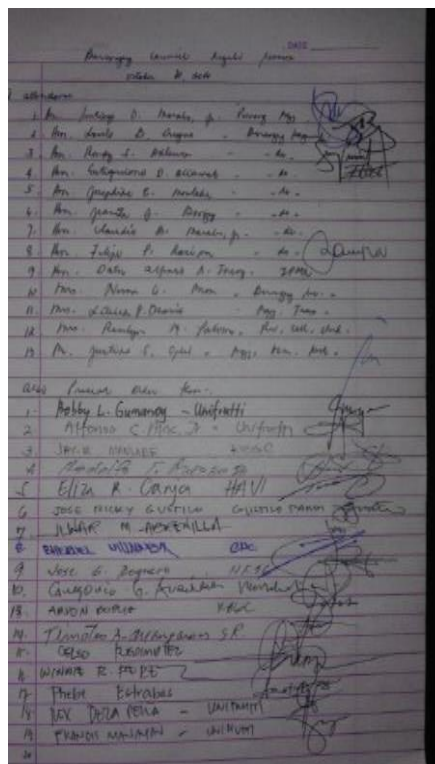
Banana Industry Stakeholders’ Meeting Action Minutes, @ Kapatagan Barangay Hall, Oct. 10, 2016

I. Agenda:

1. Environmental Issues on Banana Farming within Mt. Apo National Park
 - a. Encroachment into strictly prohibited areas
 - b. Tree planting/Buffer zones/ tree nursery establishment
 - c. Waste management
2. Social and Health Issues
 - a. Labor issues
 - b. Social benefits (Philhealth, SSS, Pag-ibig)
 - c. Health
 - d. Safety at work
 - e. Chemical handling
 - f. Farm materials
 - g. Pole vaulting / Price war
 - h. Multi-Agency monitoring
3. Community Relations
4. Other Issues
 - a. Farm to market road
 - b. Real Property Tax
 - c. Organization of Kapatagan Banana Stakeholders



Photos: The meeting started with a prayer.



Attendance sheet showing the attendees from the Brgy office, Banana Growers, Unifrutti Group (Quality and CEHS)



Brgy. Captain Santiago Morales, Jr. Presided the meeting.



Mr. Cosaga of PENRO (DENR) entertaining the questions from Kapatagan attendees.

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