

BOOK OF ABSTRACTS

FOURTH INTERNATIONAL NHF WORKSHOP

*“From Traditional Crops to Fast Food: Diversity and
Change in Southeast Asian Food Production and
Consumption”*

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CONTENTS

| | |
|---|-----------|
| Theme A: Traditional crops and foods | 4 |
| Dr. TERESITA D. ALLIG and BLESSILDA A. BUSTAMANTE- Enhancement of farm household income, food security and capability building in the province of Ifugao through the adoption of integrated crop management for indigenous and high yielding rice varieties | 5 |
| Mrs. RITA PATRIASIH et al. – Nutrient intake and nutritional status of Cirendeu people in West Java who consumed Cassava as staple foods | 6 |
| Mr. ANNIS CATUR ADI et al. -Underutilized food plants in food In secure area of Bangkalan district and the potential role of local religious leader for promoting the consumption | 7 |
| Dr. ROBERT T. NGIDLO - Climate change and modern farming technologies: impacts on productivity, biodiversity and food security in the rice terraces of the Cordillera Region, Northern Philippines | 8 |
| Dr. D. LICYAYO- Improving food security in the family through identification and cultivation of wild edible fungi in the selected Provinces of the Cordillera Administrative Region (CAR), Philippines | 9 |
| Mrs. D. MELDOZ et al. - Diversity and utilization of roots and tubers among indigenous peoples in Northern Philippines | 10 |
| Ms. WINATI WIGMA et al. - Social changes, food and nutrition systems, and dietary diversity of indigenous people in West Java: A study in Kasepuhanciptagelar and Sinarresmi | 11 |
| Theme B: Effects of migration and urbanization on food and nutrition security | 12 |
| Mrs. ARI ISTIANY et al. - Study of food access, food hygiene, environmental sanitation, and coping mechanism of households at slum areas | 13 |
| Mrs. CESILIA METI DWIRIANI et al. -Lifestyle and nutritional aspects of rural and urban adolescents | 14 |
| Mr. KHUN BALA– Study on the socio-economics, changes in the family, and development of children among Myanmar indigenous Women Migrant Workers (WMW) household, Myanmar | 15 |
| Mr. HOM GARTAULA - Changing value of food and perception of food security in the context of male out-migration in Nepal | 16 |

| | |
|---|-----------|
| Mrs. K.R. EKAWIDYANI et al. - Overweight among school children: It's causes and effect on physical fitness, anemia, and academic performance | 17 |
| Mr. PARASMANI DASGUPTA et al. - Secular trends in the measures of physical growth, body composition and nutritional status in urban Bengali children aged 7.0-21.0 years from Kolkata, India | 18 |
| Theme C1: Categories of vulnerable people | 19 |
| Mr. NAUFAL M. NURDIN et al. - Socio-economic, demographic, Dietary and lifestyle characteristic and the prevalence of metabolic syndrome of middle aged rural people | 20 |
| Ms. BETTY YOSEPHIN et al. - Determinant factors of vitamin D status of female workers at childbearing age | 21 |
| Mrs. LEILY AMALIA FURKON et al. - Iodine intake and intelligence level among children in highland and coastal areas of West Java, Indonesia | 22 |
| Mr. ALI KHOMSAN et al. - Growth and cognitive development of preschool children | 23 |
| Mrs. RATNA C. PURWESTRI -Association of dietary habits and nutritional status of children living in the food surplus areas, Denmark, Central Java, Indonesia | 24 |
| Mrs. MARIA THERESA M. TALAVERA- Relationship of climate change variables and nutritional status of preschool children among farming households | 25 |
| Mrs. NURUL MUSLIHAH - Household food insecurity and relationships with feeding practices and incidence stunting and anemia among children aged 6-23 in poor rural Indonesia | 26 |
| Ir. YAKTIWORO INDRIANI et al. - Nutritional status and physical fitness of the non pregnant woman workers to support the household socio-economy | 27 |
| Mrs. ISMA WIDIATY et al. - A study on psychosocial aspects of the elderly living with their family and of those living in nursing home | 28 |
| Theme C2: Marginalized communities | 29 |
| Ms. REARIO, MFDR and TALUKDER, A. - Developing an effective community-based model of homestead food production to improve the food security and economic status of families in the autonomous region in Muslim Mindanao (ARMM), Philippines | 30 |
| Mr. Y. ARIHADI - Household's food security among the marginalized | |

| | |
|--|-----------|
| traditional Mangrove users | 31 |
| Dr. JULIETA B. DORADO et al. - Backyard vegetable gardening towards hunger mitigation and dietary modification in selected Philippine marginal communities: A qualitative evaluation | 32 |
| Mr. EDEN FRUNT, MSC. Et al. - Role of social capital in food security after involuntary resettlement in the Philippines and Indonesia | 33 |
| Mrs. HASNAWATI AMQAM - Nutrient intake patterns of Horticulture farmers in three ethnics population in Indonesia; Nutritional aspect of farmer susceptibility to Organophosphate Insecticide exposure and it's effect to thyroid function | 34 |
| Mrs. DWI HASTUTI et al. - The tengger's tribe family: household food security, caring practices and family well-being | 36 |
| Ms. DONYA SARAH MADJDIAN, M.SC. - Gender, family, and intra-household allocation of food in two communities in the hidden Himalayas, Humla District, Nepal | 37 |
| List of participants | 38 |
| Useful Address | 42 |

THEME A

TRADITIONAL CROPS AND FOODS

ENHANCEMENT OF FARM HOUSEHOLD INCOME, FOOD SECURITY AND CAPABILITY BUILDING IN THE PROVINCE OF IFUGAO THROUGH THE ADOPTION OF INTEGRATED CROP MANAGEMENT FOR INDIGENOUS AND HIGH YIELDING RICE VARIETIES

Teresita D. Allig * and Blessilda A. Bustamante
Ifugao State University, Lamut, Ifugao
main@ifsu.edu.org c/o Dr. Serafin L. Ngohayon, University President

ABSTRACT

The study was conducted from April 2010 to December 2011 at the province of Ifugao, Cordillera region, Philippines with the objectives of increasing farm household income and sustained food for the family through integrated crop management practices and organic farming. The study made use of wild sunflower leaves (*Tithonia diversifolia*), Madre de Cacao leaves (*Gliricidia sepium*), indigenous microorganism (IMO), Papaya Fruit Extracts (FPJ) and botanicals as sources of fertilizer and pesticide to reduce cost of synthetic pesticides and fertilizers. Integrate shells, watercress and other vegetables in farmer's rice field as additional sources of income and food for the family.

Data on the socioeconomic profile of farmers in the study sites showed an average household number of 8 and consumed their rice harvest for an average of 7 months with an average income of P3, 555.00/cropping.

The experiment conducted in farmer's field showed a yield increase for indigenous rice varieties fertilized with organic fertilizers to a highest of 48.64 % and lowest of 8.65 %. Highest net income increase of 75 % and lowest of 0.94 %, highest ROI of 135 % and lowest of 84 % was realized. An increased yield of 22.8 %, highest net income of 62 % and return on investment (ROI) of 560 % was realized for high yielding rice varieties.

Integrating fishes, shells and vegetables in the farm has added income ranging from P 415.00 to P1, 840.00 pesos per cropping giving a net income increase ranging from 23 to 58 %.

Keywords: Indigenous rice varieties, Integrated Crop Management

*The researcher is a faculty of the College of Agriculture and Forestry, Ifugao State University, Lamut Campus, Cordillera Administrative Region, Philippines

NUTRIENT INTAKE AND NUTRITIONAL STATUS OF CIREUNDEU PEOPLE IN WEST JAVA WHO CONSUMED CASSAVA AS STAPLE FOODS

Rita Patriasih^{1*}, Isma Widiaty¹, Mira Dewi², Winati Wigna² and Dadang Sukandar²

¹ Department of Home Economics Education, Indonesia University of Education, Bandung, Indonesia., ²Faculty of Human Ecology, Bogor Agricultural University, Bogor 16680, Indonesia
harpabiru@yahoo.com and ritapatriasih@upi.edu

ABSTRACT

The objectives of this research were to analyze food habits and nutrients intake, and nutritional status of Cireundeudeu people in West Java who consumed cassava as staple foods. The research was carried out in District of Cimahi, Province of West Java, Indonesia. Cireundeudeu community consists of 25 families who consume rasi made from cassava (CC) as staple food. In this study other 41 families who consume mix food (cassava+rice/CCR) as staple food was also drawn as sample. A sample of size 61 who consumed rice (CR) as staple food was randomly drawn from a population who live around Cireundeudeu. The data obtained from questionnaires. Means, standard deviation, frequency and proportion were calculated with a combination of software applications: Microsoft Excel and Statistical Analysis System. The result showed the level of consumption adequacy did not meet the recommended dietary allowances i.e. with the shortage.

On average, the energy adequacy levels of the whole groups of the households CC, CR, and CCR were still low, that is, 65.8%, 50.6% and 45.5% respectively. There were only 12% of the respondents in the households CC, and 5% and 2.4% in the households CR and CCR respectively, whose energy adequacy levels have been adequate. The average protein adequacy which is good was found in the households CC, that is, 108.7%, while the protein adequacy levels of the other two groups were still inadequate, that is, about 70%. Approximately half of either the households CR or CCR still had their protein adequacy level below 70%. Viewed from the categories, the nutritional status of 87.9% of the households CR and 71.1% of the CCR belonged to the category of poor nutrition, while 60.9% of the households CC belonged to the normal category. Analysis of variance shows that there was no significance different among BMI of husband and wives within three groups of consumption ($p>0.05$).

Keywords: nutrients intake, nutritional status, Cireundeudeu people

UNDERUTILIZED FOOD PLANTS IN FOOD INSECURE AREA OF BANGKALAN DISTRICT AND THE POTENTIAL ROLE OF LOCAL RELIGIOUS LEADER FOR PROMOTING THE CONSUMPTION

Annis Catur Adi^{1*}, Dini Ririn Andrias¹

Nutrition Department, Faculty of Public Health, Air langga University, Indonesia

*annis_catur@yahoo.com

ABSTRACT

Madura Island is part of East Java Province in Indonesia, which still facing food insecurity problems. In the context of food insecurity, underutilized food plants, including wild foods, have an important role as coping strategy during food shortage, mainly among rural poor households. This study was aimed to explore potency of underutilized food plants in food insecure area of Bangkalan District and the potential role of local religious leader for promoting its consumption. Data were collected through household interview (100 households from two Sub District), focus group discussion to farmer groups and indepth interview to religious leaders. This study found that there are various underutilized food plants, including tubers group (*Canna discolor*, *Dioscorea hispida*, *Colocasia esculenta*, *Coleus tuberosus*, *Amorphophallus paeoniifolius*, *Xanthosoma sagitifolium*, *Dioscorea alata*), fruits (*Sonneratia caseolaris*, *Muntingia calabura L*, *Limoniaaci dissima*, *Inocarpusfagifer*, *Benincasahispida*, *Phyllantusacidus*, *Sandoricumkoetjape*), vegetables (*Ziziphusmauritianaleaves*, *Moringaoleiferaleaves*) and grains (*Sorghum bicolor*). Most of the respondents showed positive attitude towards underutilized food plants, mainly vegetables group. The taste, freshness, thriftiness were among the reasons. While for those who did not like those foods, the reasons were did not like the taste, consider the foods contain low nutrient, considered as "hunger foods", and due to the availability of substitutes. The most influential local religious leader in the study area responded positively when asked about underutilized food plants. They agreed that local underutilized foods need to be promoted, mainly after the researcher explained the importance of underutilized food plants from nutrition and health perspectives combined with Islam law approach which referring to Koran and Hadits. This study concluded that there were a lot underutilized food plants which potential to be promoted for daily consumption, and there was a chance to use Islamic study group channel to deliver information on underutilized food plants potentials.

Keywords: underutilized foods, food insecurity, religious leader

CLIMATE CHANGE AND MODERN FARMING TECHNOLOGIES: IMPACTS ON PRODUCTIVITY, BIODIVERSITY AND FOOD SECURITY IN THE RICE TERRACES OF THE CORDILLERA REGION, NORTHERN PHILIPPINES

Robert T. Ngidlo Ph.D.

Ifugao State University, Potia Campus, Alfonso Lista, Ifugao
main@ifsu.edu.org c/o Dr. Serafin L. Ngohayon, University President

ABSTRACT

Climate change and modern farming technologies are the two key drivers of change in the rice terraces. The study documented and analyzed the impacts of these two variables on the level of productivity, biodiversity status and food security of farming families who are dependent on the rice terraces for survival. The study also document good farming practices that are relevant for policy decisions toward enhancing the productivity and sustainability of the rice terraces farming heritage of the Cordillera people. The study covered four rice terraces clusters located in four provinces in the Cordillera region namely: Apayao, Kalinga, Mountain Province and Ifugao. To obtain the necessary data, 10 key informants were interviewed per study site. A historical timeline workshop was conducted to facilitate the collection of data from oral recalls. A second workshop was conducted using the VAST-AGRO tool to collect information on the impacts and vulnerabilities of the rice terraces to climate extremes. Data gathering relied solely on the use of a survey questionnaire, focus group discussion, collection of soil and water samples and aquatic biodiversity assessment. A Focus Group Discussion (FGD) was assembled to validate the data after its consolidation. The result of the study was disseminated through a farmers' forum that was organized in each of the study site. The results showed that the rice terraces are influenced by eight extreme climatological events such as typhoon, intense heavy rainfall, drought, extreme cold temperature, landslide, soil erosion, fog and pest and diseases. Climate hazards influenced the rice terraces in two ways: by affecting the growth and development of rice crops and causing the physical degradation of the rice terraces environment. The sum negative impact of climate hazards in the rice terraces is low yield and the reduction of the aesthetic value of the rice terraces. Farmers adopted three modern farming technologies such as: the substitution of traditional rice varieties with high yielding rice varieties, the use of pesticides and commercial fertilizers and the use of the hand tractors. The substitution of traditional varieties with high yielding rice cultivars more than doubled rice production enhancing productivity and food security. On the other hand, the substitution of human labor with machine power reduced considerably the amount of labor spent in the preparation of the terraces. However, the continuous utilization of commercial fertilizers lowered soil pH leading toward severe acidity. The result of analysis showed that soil and water contain no pesticide residues and the population of aquatic biodiversity is not affected by both climate and modern farming technologies. The timeline showed that the rice terraces started purely as a traditional agricultural system and evolve to its present new form in the 1980's integrating modern farming technologies.

IMPROVING FOOD SECURITY IN THE FAMILY THROUGH IDENTIFICATION AND CULTIVATION OF WILD EDIBLE FUNGI IN THE SELECTED PROVINCES OF THE CORDILLERA ADMINISTRATIVE REGION (CAR), PHILIPPINES

Dinah Licayao
Ifugao State University, Lamut , Ifugao
main@ifsu.edu.org c/o Dr. Serafin L. Ngohayon, University President

ABSTRACT

This research was undertaken in the selected provinces of the Cordillera Administrative Region, Philippines. It primarily aimed at identifying and determining the utilization of wild edible fungi in the local level. Findings of the study showed that the Cordillera region has a rich wild edible fungal biodiversity. The dipterocarp and coniferous types of forest in the Cordillera region offers abundant macro-fungi that are potential sources of food for the family and promising source of income for the family. There are 23 genera and 30 species of wild edible fungi documented during the study. The mushrooms found in the coniferous forests of Mt. Province and Benguet show similarities of species found in the coniferous forests in the different Asian countries such as Japan and Bhutan. It is interesting to note that the Philippines being an island country literally separated from other countries show similar fungal biodiversity with other countries. In terms of socio-economic aspect, knowledge on fungal biodiversity among the ethno-linguistic tribes in the Cordillera region varies. The Kankanaeys of Mt. Province and Ibalois of Benguet differs in terms of knowledge on wild edible mushrooms compared to the other ethno-linguistic tribe from Ifugao, Apayao and Kalinga provinces. The culture towards mushroom collection is also different such that those in the higher elevation (Mt. Province and Benguet) practice regular mushroom collection during mushroom season, while those from the lower elevation (Ifugao, Apayao and Kalinga) rarely do mushroom collection. Harvesting of wild edible mushrooms is mainly used for food consumption in the family. It has not yet gone into commercial status, although it has a potential to earn income. The rural people collect mushrooms mainly for food consumption until recently where collectors have found markets for the collected wild edible mushroom that they started selling these mushrooms. The income derived from selling wild edible mushrooms is very significant in the contribution to the family income particularly during collection season. Further studies needs to be done for the production of these wild edible mushrooms in order to harness the economic potential and intensify the production of this commodity to satisfy the food requirements of the community and to ensure food security for the growing population.

DIVERSITY AND UTILIZATION OF ROOTS AND TUBERS AMONG INDIGENOUS PEOPLES IN NORTHERN PHILIPPINES

Betty T. Gayao, Dalen T. Meldoz and Grace S. Backian
Northern Philippines Root Crops Research and Training Center
Benguet State University, La Trinidad, Benguet Philippines
d.meldoz@yahoo.com

ABSTRACT

Rootcrops had served as an alternate staple food in the olden times especially among indigenous peoples. With the changing lifestyles of younger generation, traditional knowledge and practices on the production and utilization of root and tuber resources are at risk of disappearing. Hence, this research has the end goal to retrieve, revive, and strengthen indigenous knowledge on root and tuber crops production and utilization. Secondary data gathering, repeated interview-workshops among key informants and follow-up field observations were done to document knowledge and practices in northern Philippines.

There are ten cultivated species and nine wild roots and tubers known, grown or harvested by indigenous peoples in northern Philippines. Indigenous peoples plant as few as 10 hills to 2,000 hills of these roots and tubers and somehow reflect that indigenous peoples are good keepers of roots and tubers diversity. Survival of the roots and tubers in the area reflects their adaptation to the environment and social conditions.

Nowadays, indigenous peoples utilize roots and tubers as snack food and vegetable. Their use as food staple in place of rice or as rice extender, food insurance and as emergency food during calamities or when food/income subsidies are delayed, and as animal feeds especially for pigs are lessened. Sweetpotato and yam is a cash crop among the Kalanguyas, Bagos and Bugkalots. Among the Tingguians, Bugkalots and Aetas, rootcrops are bartered and sold to buy food necessities and rice. Sharing of root crop planting materials and the root and tuber harvest for family and community celebrations and during wakes, or as gift item is still a common practice among indigenous peoples in northern Philippines.

As to therapeutic use, the Ibalois, Mangyans, Kalanguyas and Bagos learned from experience that eating root crops is good for body cleansing, and that rootcrops have anti-cancer properties thus improving immune system.

SOCIAL CHANGES, FOOD AND NUTRITION SYSTEMS, AND DIETARY DIVERSITY OF INDIGENOUS PEOPLE IN WEST JAVA: A STUDY IN KASEPUHAN CIPTAGELAR AND SINAR RESMI

Rita Patriasih¹, Winati Wigna², Isma Widiaty¹, Hadi Riyadi², Ali Khomsan²,
Faisal Anwar²

¹Indonesia Education University, Indonesia

²Faculty of Human Ecology, Bogor Agricultural University, Indonesia
winatiwigna@gmail.com

ABSTRACT

This research will be conducted in KasepuhanCiptaGelar and KasepuhanSinarResmi, in Regency of Sukabumi, West Java, Indonesia. This study will focus on the importance of the social changes, food and nutrition systems, and dietary diversity of the indigenous people of both Kasepuhans. To get a true picture of social change, then we need to look at those three indicators of change either from researcher's viewpoint (objective) or community's viewpoint (subjective). Data on the food security will be collected by emphasizing on three components of food security, namely 1) availability, 2) access, and 3) utilization). Data on the physical food availability at the households will be observed from the production, food barter, food collection/obtaining from nature, buying, and a gift. The food access will be investigated by the Household Dietary Diversity Score (HDDS). Anthropometric measurements (body weight and height measurements) will be done to measure nutritional status of children. A total sample of 200 households will be drawn. This study will employ two approaches, that is a quantitative approach (survey) and a qualitative one (anthropological approach), so this study is explorative, descriptive, and comparative ones. The qualitative primary data include: (1) data on the socio-cultural changes, (2) data on the cultural aspects, (3) data on the food supply, (4) data on the food sovereignty, and (5) data on the coping mechanism. The qualitative data will be collected by an anthropological approach. The data analyses will be done by using the SPSS.

THEME B

EFFECTS OF MIGRATION AND URBANIZATION ON FOOD AND NUTRITION

STUDY OF FOOD ACCESS, FOOD HYGIENE, ENVIRONMENTAL SANITATION, AND COPING MECHANISM OF HOUSEHOLDS AT SLUM AREAS

Ari Istiany¹⁾, Eko Siswono²⁾, and Winati Wigna³⁾

¹⁾ Home Economics Department, Faculty of Technology, Jakarta State University, Indonesia

²⁾ Social Science Department, Faculty of Social Science, Jakarta State University, Indonesia

³⁾ Communication and Community Development Department, Faculty of Human Ecology, Bogor Agricultural University, Indonesia
winatiwigna@gmail.com

ABSTRACT

The main objectives of the study were: (1) analyzing household eating habits use the food frequency; (2) analyzing safety of food consumed by the households; (3) analyzing the nutritional status of infants, toddlers and pregnant women by anthropometric measurements; and (4) analyzing the coping mechanisms to support the household food sufficiency. The population in this research refers to the households who are in the slum areas along the rail way in Senen Sub-District and along the riverbank in Tebet Sub-District, Jakarta, Indonesia. Stratified Random Sampling was applied in this research where the slum areas stand as stratum and households stand as sampling unit, the total sample size was n=300. Some results were: (1) rice was the main staple food and consumed most frequently, other staple food oftenly consumed was noodle. Beef, chicken and fresh fish were rarely consumed. Tempeh and tofu, which were consumed almost every day. Average frequency of fruit consumption was less than once a week. Frequency of snacks consumption at both slum areas was relatively high, and fried snacks were the most frequent; (2). Average energy and calcium adequacy level was still deficit. Meanwhile, adequacy level of protein, iron (Fe) and vitamin A in both areas were in excess, (3) The prevalence of underweight, wasting and stunting among under-five children were 25.6%, 28.9% and 28.2%, respectively whereas the prevalence of obese under-five children was also high (18.8%). Over nutrition problem not only happened in under-five children, but also in wives as their average BMI were in the obese category and (4) Economic factors as the main cause of household stress in both slum areas were unmet needs to sustain family expenses and unsatisfied with the family income. Coping strategies done to fulfill family needs/expenses were wives also worked, looking for extra work and borrowing money from family or non-family especially to purchase basic needs. Coping strategies related to food expenses were varied starting from reducing amount of side dishes and staple food bought, reducing children snacks, reducing tea/coffee/sugar consumption, reducing meal frequency, bringing food to the workplace and leaving food for the day after.

Keywords: food access, food hygiene, environmental sanitation, coping mechanism of households, and slum areas

LIFESTYLE AND NUTRITIONAL ASPECTS OF RURAL AND URBAN ADOLESCENTS

Cesilia Meti Dwiriani^{1*}, Hadi Riyadi¹, Ali Khomsan¹, Faisal Anwar¹, Mira Dewi¹

¹ Lecturer and Researcher at Department of Community Nutrition, Faculty of Human Ecology, Bogor Agricultural University, Indonesia
cmetid@yahoo.com

ABSTRACT

Adolescent is an important period in human life as it undergoes rapid growth and development. Family, peer, and exposure to media play an important role in shaping adolescent's lifestyle and food habits, which later affect their nutrient intake and nutritional status. This study aims to identify adolescents' lifestyle and food habits, to compare nutritional aspects between male and female adolescents in urban and rural areas, and to analyze factors affecting their nutritional status. 436 adolescents were purposively selected from eight schools in South Jakarta (urban) and Jasinga West-Java (rural). Data were collected using a set of questionnaires and anthropometric assessment. We found that smoking prevalence among adolescents was relatively low, and two-third of urban (UA) and rural adolescent (RA) recognized the danger of smoking for health. The main purpose of internet practice for UA was as social media while for RA was for working on school assignments. The level of school days and off-school days activities of both UA and RA were not different. Similarly, the food habit between the two groups was not different. Nutrient intake was higher in UA than in RA. However, the intake only contributed to the requirement of two-third to three-quarter of energy, half to two-thirds of protein, one-fifth two-fifths of calcium and around half of iron. The prevalence of overweight-obesity among UA was 23.3%, which was about four times higher than that among RA. Conversely, stunting was suffered by 42.1% of RA, which was four times higher than that of UA, and was more common in females. Anemia was suffered by about one third of UA and almost half of RA, and was also more common in females especially in rural area. Family income was found to have positive effect on all nutritional status indicators observed. Overall, we found that nutrient adequacy was still below the requirement and double burden malnutrition existed in both UA and RA. Based on our findings, we suggest that efforts to decrease the burden should focus more on improving family income.

Keywords: lifestyle, nutritional aspects, urban-rural adolescent

STUDY ON THE SOCIO-ECONOMICS, CHANGES IN THE FAMILY, AND DEVELOPMENT OF CHILDREN AMONG MYANMAR INDIGENOUS WOMEN MIGRANT WORKERS (WMW) HOUSEHOLD, MYANMAR

Khun Bala

International Programme on Research and Training on Sustainable
Management of Mountain Areas, IPROMO, Italy
khun.bala@studio.unibo.it and khunbala5@gmail.com

ABSTRACT

In Myanmar, the number of people going abroad as migrant workers (as legal and illegal) continue to increase from one year to another. Here, the research is focus on the Myanmar indigenous women migrant to Thailand as “Women Migrant Workers (WMW)”.The departure of a wife to become a migrant worker can, on one hand, increase her family's economy, but on the other hand, cause family social problem. There is a social cost the migrant workers have to pay while they stay in the country of job destination, for example, temporary separation from beloved husbands and children, husbands marrying other women, change in power relation between men and women, tension in migrant's family, or even a divorce. For the reasons described above, it is important to conduct a research to analyze the socio-economic status, changes in the structure and function of family, family strength, child care, and growth and development of children among WMW's households. To get the objectives of the project, this research uses a cross sectional design. The design is intended to collect data on socio-economics, changes in family structure and function, family's strength, child care, and child growth and development of WMW's family at one period of time. It uses primary and secondary data. The primary data will be collected through interview, observation and direct measure, while the secondary data will be collected through tracing the data of the past and at the time of research. The study is currently ongoing and results will be available after second data collection and field data analysis. The results will be used in further projects relating socio-economic, household development, public extension to WMWs and so on.

CHANGING VALUE OF FOOD AND PERCEPTION OF FOOD SECURITY IN THE CONTEXT OF MALE OUT-MIGRATION IN NEPAL

Hom Nath Gartaula

International Development Studies, Canadian Mennonite University, 520
Portage Ave., Winnipeg, MB, Canada R3C 0G2 or 91 Thorndale Ave.,
Winnipeg, MB, Canada R2M 1C7
h.gartaula@uwinnipeg.ca or hom.gartaula@gmail.com

ABSTRACT

In the past few decades, international development practitioners have increasingly argued that migration improves household food security in the origin areas, by providing access to capital for investing in agriculture or purchasing food. However, these debates have occurred largely in isolation from a discussion of the values that underpin food production and consumption in the areas of origin. This paper questions the assumption that a shift from an agricultural-based economy to an economy based on remittances increases the ability of households involved to secure access to food in the face of rapid economic and cultural change. Based on the results of fieldwork conducted in Nepal, the paper argues that male out-migration adds to the workload of the women left behind, reduces women's and men's subjective attachment to agriculture in the area of origin and changes the values associated with land and agriculture. This makes the sector more vulnerable and unattractive and poses a threat to longer-term food security.

Keywords: Food security, wellbeing, male out-migration, Nepal

OVERWEIGHT AMONG SCHOOL CHILDREN: IT'S CAUSES AND EFFECTS ON PHYSICAL FITNESS, ANEMIA, AND ACADEMIC PERFORMANCE

K.R. Ekawidnyani, I. Karimah, B. Setiawan, A. Khomsan
Department of Community Nutrition, Faculty of Human Ecology, Bogor
Agricultural University, INDONESIA
karina_rahmadia@yahoo.com.id

ABSTRACT

Urbanization and migration have impact on people's weight. From the literature, we know that children from urban family tend to choose non-traditional diet (fast food) that contains high energy, fat, sugar and salt but low fiber and micronutrients. Meanwhile, sedentary lifestyle among children leading to overweight was associated with decreased intelligence and anemia status. This study was aimed to analyze the factors causing overweight among school children and its effects on physical fitness, anemia, and academic performance. A cross sectional study involving 224 grade 5 of elementary school children was done in urban area of Bogor City, West Java, Indonesia. Data collection including interview using questionnaire, 3 days non-consecutive 24 hour food recalls, and anthropometric measurement. Physical Activity Level (PAL) was obtained with activity recall on school days and holiday. Physical fitness was measured by physical fitness test. Anemia status was analyzed with Hemocue®. Academic performance was taken from school exam score as secondary data. Results showed that overweight risk increased 4.5 times in non-fit children compared to fit children (CI 95%: 1.758-11.513). Overweight children had lower physical fitness score ($p < 0.000$). Children with pocket money more than IDR 10,000/day (€ 0.66) was 2.7 times at risk to become overweight (CI 95%: 1.260-6.030). Low mother education decreased overweight risk 0.4 times (OR=0.400, CI 95%: 0.176-0.909). Mothers with low education mostly did not have an occupation while mothers with high education mostly had an occupation outside the home ($p < 0.001$), hence the former had more time and tend to be better in feeding care practice. Children with protein adequacy level $> 120\%$ decreased overweight risk 0.4 times (CI 95%: 0.239-0.879). Nutritional status had no significant impact on anemia status. Mean hemoglobin value was 13.0 mg/dl in both normal and overweight children. There was positive association between nutritional status and school exam score ($p < 0.001$), especially Mathematics score ($p < 0.001$) and Indonesian Language score ($p < 0.05$).

Keywords: academic performance, anemia, overweight, physical fitness, school children

SECULAR TRENDS IN THE MEASURES OF PHYSICAL GROWTH, BODY COMPOSITION AND NUTRITIONAL STATUS IN URBAN BENGALI CHILDREN AGED 7.0-21.0 YEARS FROM KOLKATA, INDIA

Parasmani Dasgupta¹, Rituparna Das¹, Sukanta Das¹ and Rana Saha²

1. Biological Anthropology Unit, Indian Statistical Institute, Kolkata, India.

2. Dinabandhu Mahavidyalaya, Bongaon, West Bengal, India
paras@isical.ac.in or paras709@gmail.com

ABSTRACT

In the backdrop of the ongoing countrywide transition the study investigates the occurrence of secular trend phenomena in averages of four anthropometric measurements, two parameters of adolescent growth spurt for seven body measurements, two measures of body composition, four indicators of nutritional status and two measures of body proportion of contemporary urban Bengali children aged 7.0-21.0 years from predominantly middle class families of Kolkata, India. Three growth data sets of three linked surveys of which the first two have been performed during the pre-transition period of the country (1952-66 and 1982-83) and the third one, during the ongoing phase of transition (1999-2011) are compared to examine the secular trend.

By comparing three growth data sets it becomes evident that the contemporary Bengali children of transitional period are significantly taller, heavier with larger body dimensions at all ages. Moreover, in seven anthropometric traits the mean ages at maximum increment have declined and the average final size has increased. Although, prevalence of stunting and thinness have significantly declined but the prevalence of overweight has significantly increased. But rise in the prevalence of obesity is not so alarming among the contemporary children. Subcutaneous fat thickness and percent body fat have also significantly increased in boys.

The changes noticed during the transitional period clearly indicate that positive secular phenomena is operating in this population in the form of increased average body size and faster rate of physical maturation. Changes in body composition in boys and nutritional status in both sexes suggest that the population is in an early stage of transition. Decline of average bi-iliacristal / biacromial diameter index in both sexes and decline of sitting height / leg length index in adult males during the transitional period signify that body proportions also respond to secular trend phenomena due to improved socioeconomic environment.

THEME C1

CATEGORIES OF VULNERABLE PEOPLE

SOCIO-ECONOMIC, DEMOGRAPHIC, DIETARY AND LIFESTYLE CHARACTERISTIC AND THE PREVALENCE OF METABOLIC SYNDROME OF MIDDLE AGED RURAL PEOPLE

Naufal M. Nurdin², Faisal Anwar², Hadi Riyadi², and Rian Dlana²

¹Funded by Neys-van Hoogstraten Foundation, the Netherlands

²Department of Community Nutrition, Bogor Agricultural University, Indonesia

Address: Department of Community Nutrition, Bogor Agricultural University,

Bogor 16680, Indonesia

naufalmn.ipb@gmail.com

ABSTRACT

Metabolic syndrome (MetS) is a group of syndrome criteria in a form of metabolic abnormalities resulted in an increased risk of cardiovascular diseases, stroke and diabetes mellitus. Many studies of metabolic syndrome have been conducted in various countries. However, most of them particularly in urban area. MetS study and their correlation with life style and consumption, in rural areas have not been much conducted. This study is important to provide basic data of metabolic syndrome in rural areas, particularly in connection with nutritional education. The objective of the study were to analyze prevalence and factors affecting metabolic syndrome in rural area. A cross sectional study involving 224 middle age (45-59 years old) man and woman was done in rural area of Cianjur District, West Java, Indonesia. Data collection of socio-economic, dietary and lifestyle characteristic will be collected through a structured questionnaire. We measure blood pressure and waist circumference and also collected blood sample for fasting blood glucose, HDL cholesterol and triglyceride. The 2009 consensus of MetS criteria for asian were used. Their require the presence of 3 or more of the following: 1. Abdominal obesity (waist circumference > 90 cm in men and > 80 cm in women); 2. A high triglyceride level (> 150 mg/dL); 3. A low HDL- cholesterol level < 40 mg/dL for men and <50 mg/dL for women); 4. High blood pressure (systolic > 130 mmHg or diastolic >80 mmHg; and 5. A high fasting plasma glucose concentration (>110 mg/dL). Result showed among 224 subject in cianjur district, the prevalence of metabolic syndrome 24.6 %. All other data still in progress.

Keywords: Metabolic syndrome, rural, cholesterol, glucose, blood pressure

DETERMINANT FACTORS OF VITAMIN D STATUS OF FEMALE WORKERS AT CHILDBEARING AGE

Betty Yosephin¹, Faisal Anwar², Hadi Riyadi², Nur Elly¹

¹ Health Polytechnic of Bengkulu

² Faculty of Human Ecology, Bogor Agricultural University, Indonesia
patricknmom@yahoo.co.id

ABSTRACT

This research will be conducted in at garment factory in Sukabumi, West Java, Indonesia. This study is planned to use a *cross sectional* design and will be conducted. . Specific objectives of this study are: (1) To identify the social economic characteristics of households of female workers; (2) To identify the contribution of female workers in household income; (3) To identify food habits and food consumption of female workers; (4) To measure intake of energy, protein, vitamin D and calcium of female workers and their nutritional status; (5) To identify sun exposure of female workers; (6) To analyze prevalence of deficiency vitamin D of female workers; (7) To analyze factors affecting deficiency of vitamin D of female workers.

The research population is normal and overweight women, who are 18-40 years old and work at garment factory. Total samples are 150 female workers. Data collected are primary ones, taken by using questionnaire and measurement as well as an analysis of blood biochemistry. Data of respondents' characteristics will be collected at the beginning of the research stage, consisting of name, date of birth, ethnic group, education, habit of applying cosmetic/sunblock, sun exposure, distance from home to factory, and working duration, nutritional knowledge, physical activities including activities at home and sport (length, kinds and frequency). Data of health status collected will be illness history and habit of supplement consumption. Anthropometric nutritional status of the female workers of childbearing age will be determined by Body Mass Index (BMI). Data of blood biochemistry will include serum 25(OH) D. Data of the food consumption will include food recall and FFQ.

IODINE INTAKE AND INTELLIGENCE LEVEL AMONG CHILDREN IN HIGHLAND AND COASTAL AREAS OF WEST JAVA, INDONESIA

Leily Amalia Furkon¹, Hadi Riyadi¹, Tin Herawati¹, Virna Tiurmauly²,
ReisiNurdiani¹

¹Faculty of Human Ecology, Bogor Agricultural University, Indonesia

²Psychology agency of CV. Pro Psikologika, Jakarta, Indonesia

leilyamalia@yahoo.com

ABSTRACT

Iodine is one of micronutrients that has important role for brain development, especially for children. Currently, iodine deficiency is one of main nutritional problems in Indonesia, which if it is not promptly overcome, the Indonesian people will suffer from the decrease of academic achievement as well as the working productivity. This study was aimed to analyze food and iodine source consumptions of children, to analyze the iodine content of salt consumed by households, to analyze IQ of children; and to correlate the IQ and iodine intake of children. Design of this study was a cross-sectional study, conducted in 2011-2012 in District of Cianjur representing a highland area and Karawang as a coastal area. The subjects were 300 elementary school children, at grade 4 or 5. The data collected consisted of food consumption, iodine source consumption (included from salt), and IQ score of subjects. The data was collected by interviewing children and their mothers. The analysis of iodine content of salt was measured in Laboratory of GAKI in Magelang, Central Java. The measurement of IQ was conducted and supervised by psychologists using a method of Culture Fair Intelligence Test. The result shows that iodine adequacy level of samples in highland was higher than in coastal area. The iodine intake among samples in highland was mostly contributed from salt compared to food (40-50% vs. 20%) to the total iodine adequacy level. On the contrary, the iodine intake of samples in coastal area mostly came more from food (>100%) compared to salt (<10%). However, the number of households both in the highland and the coastal areas that consuming iodized salt in proper amount (30-80ppm) were very rare, only 14.8% and 8.8% respectively. The majority of IQ of subjects living in the highland distributed in average (58.1%), as well as found among subjects in the coastal (54.7%). There was no significant difference in IQ distribution between the subjects in the both areas. The correlation analysis shows that there was a positive significant correlation between iodine intake and IQ level of children ($p=0.048$, $r=0.114$). It means that the adequate iodine intake will imply on the goodness of IQ children

GROWTH AND COGNITIVE DEVELOPMENT OF PRESCHOOL CHILDREN

Ali Khomsan^{1*}, Faisal Anwar¹, Neti Hernawati¹, Nani Sufiani Suhanda², and Oktarina¹

¹Faculty of Human Ecology, Bogor Agricultural University, Indonesia

²Ministry of Agriculture, Indonesia
erlangga259@yahoo.com

ABSTRACT

Malnutrition in children under five will have an impact on the delayed physical growth and disordered cognitive development. The objective of the study was to analyze factors that influence growth and cognitive development of preschool children. This study was carried out in Subang District, Indonesia in 2011-2012. The number of samples was 402 children. Data was collected through interview using a set of questionnaires, measurement, and direct observation. The results of this study showed that father and mother education mostly was elementary school. On the average the non-farmer had higher education than the farmer group. The income of the non-farmer households was higher than of the farmer households (IDR300,245vs IDR229,760 per capita per month). The mothers with a high nutritional knowledge were more frequently found in the non-farmer households. The mothers from the non-farmer households also gained a high score of the nutritional attitude. There were still relatively many children with underweight (>25%) and stunted (>30%) in both groups. The cognitive development of the children in the non-farmer household group (score=57.4) was slightly better than that in the farmer household group (score=53.5). However, it was statistically not different ($p=0.06$). Children participated in the PAUD (early child education) had cognitive development better than that of the non-PAUD member group ($p<0.05$). The study revealed that the cognitive development was correlated with the length of fathers and mothers' education, involvement in PAUD, nutritional status by index W/A (weight for age) and H/A (height for age) as well as the psychosocial stimulation ($p<0.01$).

ASSOCIATION OF DIETARY HABITS AND NUTRITIONAL STATUS OF CHILDREN LIVING IN THE FOOD SURPLUS AREAS, DEMAK, CENTRAL JAVA, INDONESIA

Ratna C. Purwestri
UntereGarten 17, 70771-Leinfelden-Echterdingen, Germany
purwestri@yahoo.com

ABSTRACT

Central Java is one of the national food buffers in Indonesia, especially for rice production by having >55 quintal per hectare (qu/ha) per year, unfortunately also by having a high prevalence of stunting and wasting children. *Objective:* This study aims to analyze the dietary habits and their relations to the nutritional status of children in rice producing areas.

Demak regency in Central Java fulfilled our entry criteria and selected as the study area. A total of minimum 380 children from farmer-family background will be recruited in our cross-sectional survey and interviewed, including socio-economic aspects, health/nutrition-related knowledge, feeding practices, agriculture practices and production. Their body weight and height will also be measured. Focus group discussions (FGD) to mothers, as well as in-depth interviews (II) to local health staff, village office staff and mothers will also be done to capture the habitual intake and other cultural condition.

Currently, 270 children have been recruited with mean age about 27.2 ± 16.4 months. Approximately 11% of the eligible children suffered from wasted, 23% and 27% of them were underweight and stunted respectively. Results of IIs and FGDs revealed that although the mothers knew about well-balance diet for their children, however if they had money and the child cried and asked for snacks/drinks from nearby shop/vendors, they would buy them. Their children consumed the snacks frequently and on daily basis.

It seems that the daily snacking habit might decrease the consumption of the child's main menu, which caused undernourishment among children in our study area. The high proportion of wasted and underweight children indicated an alarming situation. Nevertheless, a complete and further analysis need to be carried out to assess the cause of undernourishment among children and its correlation to their actual intake, diseases and the family agricultural situation.

Keywords: food habit, snacking habit, wasted, underweight, stunted

RELATIONSHIP OF CLIMATE CHANGE VARIABLES AND NUTRITIONAL STATUS OF PRESCHOOL CHILDREN AMONG FARMING HOUSEHOLDS

Maria Theresa M. Talavera
Institute of Human Nutrition and Food College of Human Ecology UP Los
Banos Laguna Philippines
mtmtalavera@yahoo.com

ABSTRACT

The impact of climate change variables on nutritional status among young children is not yet quite studied. Most research done are focused on finding evidence that climate change is occurring, on climate change projections, and on climate change impacts at the global and country levels. There is a need for data showing the effects of climate change on the nutritional status at the household level particularly among children under five years old (CU5). Hence, this study aimed to compare the nutritional status of children across climate type variations and determine the association of the nutritional status of children with socio-demographic and economic characteristics; food intake; and health status.

A cross sectional study design was used and data were collected in two municipalities with different climate types. Nutritional status, food intake, onset of illness, food production, and caring practices were collected every month for a period of 6 months. The questionnaires were pretested and revised before the actual data collection. Anthropometric measurements were measured using standardized protocols. Dietary intake was assessed using 24-food recall technique.

Initial results show that food intake, socio-demographic status, caring practices have an effect on the nutritional status of children. However, the associations of the climate change variables with the other variables are yet to be explored. Data analysis is ongoing but multiple logistic regressions will be used to determine the direction of the relationship and the presence of an association may be interpreted as proof that the climate change variables caused the outcome. It is hypothesized that fluctuating values of selected climate change variables results to an increase in the incidents of illness and under nutrition.

HOUSEHOLD FOOD INSECURITY AND RELATIONSHIPS WITH FEEDING PRACTICES AND INCIDENCE STUNTING AND ANEMIA AMONG CHILDREN AGED 6-23 MONTHS IN POOR RURAL INDONESIA

Nurul Muslihah¹

¹ Department of Nutrition, Faculty of Medicine, University of Brawijaya, Indonesia
nurul_muslihah@yahoo.com

ABSTRACT

Household food insecurity can negatively affect food consumption and worsen nutritional status. We examined the relationship of household food insecurity with feeding practices and incidence stunting and anemia among child under-two years in poor rural, Indonesia.

In Cross Sectional Survey of 300 children aged 6.0-23.9 months were involved. Household food insecurity was assessed using a short version of the Household Food Insecurity Access Scale developed by the FANTA project. Analysis chi-square was used to determine association between variables.

Proportion of household with food insecurity was 65.3%, with mildly, moderately, and severely food insecure access was 24.3%, 27.7%, and 13.3%, respectively. The prevalence of anemia was 46.7% and stunting 34.7% and no significant association with HH food security status. Stunting was higher among children in HH food insecure, aged 12.0-23.9 months and breastfed. Anemia was higher among children in HH food insecure, aged 6.0-11.9 months and breastfed. Score of ideal feeding practices was 40.9±12.2% and no difference among HH food secure and insecure. Proportion of four keys poor complementary feeding were 72.7% infant have introduced of first complementary food less than 6 months of old; not meeting minimum dietary diversity was 75.3%; not meeting minimum meal frequency was 58.7%; and not meeting acceptable diet was 90.7% and all of them were no difference among HH food secure and insecure. Proportion of consuming animal source food and fruit or vegetables yesterday were not significant association with household food insecurity status. Proportion of children meet recommended daily energy and fed nutrient and energy dense food were lower among children in HH food insecure than food secure.

Complementary feeding and nutritional status is poor both children in household food secure and food insecure. A challenge to improving complementary food through behavior change communication and micronutrient intervention with fortified complementary food.

Keywords: household food insecurity, complementary feeding, stunting, anemia

NUTRITIONAL STATUS AND PHYSICAL FITNESS OF THE NON PREGNANT WOMAN WORKERS TO SUPPORT THE HOUSEHOLD SOCIO-ECONOMY

Yaktiworo Indriani¹, Hadi Riyadi², Reni Zuraida³

¹Faculty of Agriculture, University of Lampung, Indonesia.

²Faculty of Human Ecology, Bogor Agricultural University, Indonesia.

³Faculty of Medicine, University of Lampung. Indonesia.

yakti_indriani@yahoo.com

ABSTRACT

Most of the many women workers in Indonesia are reproductive women coming from middle to lower economic group who usually have nutritional problems. The objectives of this research were to identify and analyze the socioeconomic characteristics of the households, the knowledge, attitude, nutritional behaviour, eating pattern, nutritional status, and the physical fitness of the non pregnant woman workers in a pineapple industry. The number of the samples was 338 women. The results showed that the woman workers could be divided into three working positions, that those who sat more, 178 people; stood more, 47 people; and stood and walked 113 people. On average the income of the woman workers' households was as much as Rp2,716.79. The woman workers contributed up to 50% or more of their income to the household income. The majority of the woman workers possessed good nutritional knowledge and attitude, but they rarely consumed diverse foods everyday. The iron adequacy level of the workers was less than 70% or severely deficit. On average the nutritional status calculated by BMI of them was 23.1 kg/m² (belonged to be at risk of obesity). As much as 9% of the woman workers suffered from malnutrition (thinnes), while those experienced overweight (BMI>25) were as much as 20% with the highest prevalence in the workers with the sitting position (22%). Although the haemoglobin level of them was 129 g/l on average (normal), but 16.8% of them founded as anemia with the highest prevalence of anemia in the standing & walking position, that is, 20.3%. The physical fitness of most of the woman workers (as much as >74%) belonged to excellent and superior with the average VO₂max as much as 40.3 ml/kg/minute or belonging to normal or excellent. The woman workers who experience anemia need to get iron supplements.

A STUDY ON PSYCHOSOCIAL ASPECTS OF THE ELDERLY LIVING WITH THEIR FAMILY AND OF THOSE LIVING IN NURSING HOME

Isma Widiaty¹, Rita Patriasih¹, Mira Dewi², Ali Khomsan²

¹ Department of Home Economics Education, Faculty of Technology and Vocational Education, Indonesia University of Education, Indonesia

² Faculty of Human Ecology, Bogor Agricultural University, Indonesia
isma@upi.edu

ABSTRACT

The elderly is one of the groups in the category of vulnerable people cause many problems either physically, biologically, and psychologically. The objective of the study was to analyze psychosocial aspects (perceived happiness, stress, family strength) of the elderly living in nursing home and those living with their family. The research was taken place in Bandung, West Java, Indonesia. This study was carried out to the elderly (aged > 55 years old) as sampling unit. Eighty two elderly living in nursing home were selected as samples. Another 336 elderly living outside nursing home were chosen purposively. The general result on perceived happiness both elderly in nursing home and in non-nursing home had similar perception. The highest factor which made elderly feel happy was always grateful with their lives (96, 9%), while feeling guilty about past events became lowest factor (55,3%). Data presented about score of depression among elderly show that elderly in non-nursing home had the highest score in aspect of *no depression* (50%) compare to them in nursing home (45,1%). Analysis of variance shows that there was no significance different among score of depression of elderly in nursing home and in non-nursing home ($p>0.05$). The present study about family strength shows that the elderly in nursing home was better of psychological strength (51,2%) than those in non-nursing home (41,1%), while elderly in non-nursing home was better in aspect of physical and social strength. Aspect of physical strength, elderly in non-nursing home had better (74,1%) than those in nursing home (54,9%). Aspect of social strength, elderly in non-nursing home had better (16,4%) than those in nursing home (13,4%). Analysis of variance shows that there was significance different among family strength of elderly in nursing home and in non-nursing home in three aspects ($p<0.05$).

Keywords: Elderly, Psychosocial Aspects, Nursing Home and Non Nursing Home

THEME C2

MARIGINALISED COMMUNITIES

DEVELOPING AN EFFECTIVE COMMUNITY-BASED MODEL OF HOMESTEAD FOOD PRODUCTION TO IMPROVE THE FOOD SECURITY AND ECONOMIC STATUS OF FAMILIES IN THE AUTONOMOUS REGION IN MUSLIM MINDANAO (ARMM), PHILIPPINES

Reario, MFDR and Talukder, A.
67 Pilkington Drive, Toronto, ON Canada M1L046 or Helen Keller International
Road #3Z43 Street 466 SangkattonleBassac Khan Chankar Mon Phnom Penh
Cambodia
ZTalukder@hki.org and dreario@hki.org

ABSTRACT

The health and nutrition situation in ARMM is among the most critical in the region: under nutrition and micronutrient deficiencies are serious public health problems with negative consequences on health and economic development. Micronutrient malnutrition largely occurs due to lack of access to micronutrient rich foods. There is a need to determine an appropriate homestead food production (HFP) models for sustainability. We conducted a research to compare two models - one managed by local government units (LGUs) and non-government organizations (NGOs).

Compared and analyzed two models, LGU or NGO, is more sustainable and assessed the impact of household food security on accessibility and consumption of micronutrient rich foods and livelihood in selected municipalities of Lanao Del Sur in ARMM.

A total of 300 households represented by women were randomly selected using two cross-sectional surveys (baseline and endline), 150 mothers for each model were interviewed using a structured questionnaire.

Household food security improved models, increased food production and diversity of food micronutrient-rich foods with intensified nutrition education and improving households' economic capacity. A higher proportion of NGO households purchased their foods more from income generated in selling vegetables than LGU model. Involvement of women in both models led to empowered mothers, and as "decision makers" on HFP generated income. Partnership encouraged health and nutrition workers access to available health and nutrition services, and information dissemination through community mobilization. Mothers in both models demonstrated an improved knowledge as well as practices on infant and young child feeding.

Regardless on HFP models, similar benefits were obtained and could complement programs aimed at improving the food security, economic status, women empowerment and livelihood through development programs of agriculture and health services. However, NGO model is slightly better to implement HFP than LGU because they were organized and better in community mobilization for HFP project.

HOUSEHOLD'S FOOD SECURITY AMONG THE MARGINALIZED TRADITIONAL MANGROVE USERS

Yosef Arihadi
yosef.arihadi@recoftc.org

ABSTRACT

The study tries to describe dynamic of resources use and its effects to social structure, livelihood and food security of the communities dependent to the resource. The resource selected as the case study is mangrove in Sedari, a village located at the district of Karawang in the north coastal areas of West java, Indonesia.

Mangrove resources are productive ecosystem and play a crucial role in the life cycle of many marine species. Mangrove dependent communities have used the coastal zone for capture and culture fisheries for cash income and irrigated farm land for paddy production. The growing commercial fish production transformed modes of access to mangrove resources and created new division of labor which involved marginalization of mangrove users. The collection of fish resources which once enabled fishers to have free access to the fish became restricted. As the mode of production was altered by fish culture, only people with greater capital capacity could run and maintain the business.

Caretakers of fish ponds—waged labor for the production and maintenance of fish ponds became a typical occurrence. Small local fish farmers were marginalized, often falling into debt and eventually losing their access to the fishponds. Accumulation and alienation of communities with mangrove resource (fishpond) were occurred in line with the growth of fish culture in the village. Those who have no access to mangrove, enter into capture fishing in the coastal sea, as small fisher or crew of fishing vessels. Traditional users—namely fishers and crabbers—were more severely restricted from entering the mangrove resources, many parts of which being claimed as private property of big and some small fish farmers. The right to trap wild shrimp, which was formerly an open access resources, had been entrusted to caretakers or small fish farmers, while the right to catch wild tilapia and crab had been closed to traditional users as fish farmers started to exploit and culture the resource for their own commercial gain.

Differentiation of wealth among the mangrove dependent community are observed. Few people are wealthy, while most community members felt themselves as poor and vulnerable. In terms of nutritional status, both the wealthy and the marginal have health problems from BMI indicator. Both the wealthy and the poor have potential health problem. Out of the total wealthy households, 4.6% adult male are severely overweight, while 22,7% adult female are severely overweight. Out of the total poor households, 4,4% adult male are underweight, 8,8% adult male are severely overweight and 29% of the adult female are severely overweight.

BACKYARD VEGETABLE GARDENING TOWARDS HUNGER MITIGATION AND DIETARY MODIFICATION IN SELECTED PHILIPPINE MARGINAL COMMUNITIES: A QUALITATIVE EVALUATION

Julieta B. Dorado, Rowena V. Viajar, Glenda P. Azaña,
Georgina S. Caraig and Mario V. Capanzana, Ph.D.
138 BrgyDayapCalauan Laguna or Food and Nutrition Research Institute-
DOST BicutanTaguig City
mvc@fnri.dost.gov.ph

ABSTRACT

In response to the increasing incidence of hungry families, the Philippine government crafted hunger mitigation strategies to address the supply and the demand to obtain sufficient food. In 2009, the National Statistical Coordinating Board estimated that 20.9 percent or 3.86 million families are living below the poverty line. The vegetable gardening program is one of the anti-poverty initiatives of the Department of Agriculture along with other national programs. This study examined the implementation of the backyard vegetable gardening program as a support strategy towards hunger mitigation and determined the effects on the marginalized households with schoolchildren. Households with and without vegetable garden were studied. In-depth qualitative data were obtained on the experiences and perceptions of households on vegetable gardening and its effects on the dietary behavior. Majority of the households were aware of the vegetable gardening program in the area. The primary benefits identified were related to health and nutrition and economic aspects. The dietary diversity scores (DDS) of both schoolchildren and households were low and similarly not significant. Schoolchildren and households with and without garden have less intake of variety of foods. There is a need to continuously strengthen nutrition education on the importance and functions of vegetables in the body to increase the knowledge of mothers/caregivers and to encourage all household members, particularly, children to eat vegetables. Backyard vegetable gardening has a great potential in assuring households' food security, however, a need to re-visit the program implementation guidelines on backyard vegetable gardening at the local level should be pursued.

Keywords: dietary behavior, food insecurity, households, schoolchildren, vegetable Consumption, vegetable garden

ROLE OF SOCIAL CAPITAL IN FOOD SECURITY AFTER INVOLUNTARY RESETTLEMENT IN THE PHILIPPINES AND INDONESIA

Eden Frunt, Msc., Dr. Melissa Quetulio-Navarra and Prof. Dr. Anke Niehof
Admiraliteitslaan 940 5224 EW's-Hertogenbosch, The Netherlands
edenfrunt@hotmail.com

ABSTRACT

A plethora of studies have demonstrated that involuntary displacement and resettlement of poor households due to disasters and infrastructure projects bring more harm than benefits. Still, approximately 10 million people per year enter the cycle of involuntary displacement and relocation due to dam and transportation-related development programs alone. Cernea has identified nine inherent and interlinked risks of involuntary displacement and among these identified risks, the “social disarticulation” or loss of social capital is the most daunting to tackle constructively while “food security” has been observed as hardest to sustain.

Social capital studies have pointed out the positive relationship of social capital with food security among poor and non-poor households, elderly, and refugees both in the first world and developing countries context. This present study shall also utilize the social capital theory in examining how newly forged structural and cognitive social capital in a resettlement community contribute to securing food and fighting hunger among poor resettled households after one year of involuntary resettlement in the Philippines and Indonesia. The study will further explore how the differences in these two countries in (i.e. culture, physical setting, policies, and job) account for varying outcomes.

One hundred fifty households in the urban resettlement site in the Philippines were randomly selected for the study while 58 households living in a rural resettlement site in Indonesia were considered. The displacement activity in the Philippines started in 1999, while households in Indonesia transferred to the new site in 2001.

Data were collected by means of a tailored event history calendar, involving a standardized, face-to-face, retrospective interview with the head of household about the state of his or her social capital and food security a year before the resettlement and a year later. Data obtained through the calendar tool were complemented and triangulated with the other data we gathered through in-depth interviews with the key people in the resettlement program, non-participant and participant observation, and focus group discussions.

Results of this study can yield insights on the theoretical implications of social capital age and size in securing food in an involuntary resettlement setting involving poor households of contrasting contexts.

NUTRIENT INTAKE PATTERNS OF HORTICULTURE FARMERS IN THREE ETHNIC POPULATION IN INDONESIA; NUTRITIONAL ASPECT OF FARMER SUSCEPTIBILITY TO ORGANOPHOSPHATE INSECTICIDE EXPOSURE AND IT'S EFFECT TO THYROID FUNCTION

Hasnawati Amqam
nana_azzahra@yahoo.com

ABSTRACT

As agricultural support, horticulture farmers are required to produce high quality of crops to fulfilled market demand. Therefore, using pesticide intensively is an instant way to gain it. One pesticide group which are used widely is organophosphate. This high toxicity insecticide might bring to poisoning as acute effect and thyroid function disruption as one of chronic effects. One factor plays a role in organophosphate related-health effect occurrence is individual susceptibility to organophosphate which can be measured from serum/plasma paraoxonase 1 (PON1) status. PON1 varies between and within ethnics. Furthermore, PON1 activity is influenced by some factor such as age, diet, body mass index, physical and pathologic condition. This study is still on going and some first results is presented.

The study was performed to get factors may influence individual susceptibility to organophosphate of horticulture farmers in three ethnic groups and the health effect of pesticide exposure to thyroid function. The specific objective are to get description on nutrient intake pattern of horticulture farmers and to get description on smoking habit, body mass index, and age of horticulture farmers. This study was cross sectional study in three ethnic groups namely Sunda, Java, and Makassar. There were 300 farmers as study subject. Diet was assessed using a 2x24-hours recall questionnaire and 66-item food frequency questionnaire. The data were analyzed using nutrisurvey software to obtain dietary intake of carbohydrate, energy, protein, fat, vitamin E, Vitamin C, zinc, calcium, and Cu. Their urine was analyzed as well to get information on Iodine and thiocyanate intake. They were also asked about smoke behavior. Anthropometry measurement was performed to get body mass index (BMI) data.

This study showed that most of subjects are in 30-49 year of age (83.6%, min 13 -max 80 year. Majority of them are smoker (67%) and 34.2% of them are light smoker according to Brickman Index. BMI data showed 60% of them are in normal range and 25.5 % are obese. Dietary intake analysis showed that majority of them have inadequate nutrient intake according to Recommended Dietary Allowances (DRA), specifically energy (82.6 %), carbohydrate(77,9 %), protein (57.4%), fat (76.5 %), vitamin E (96%), vitamin C (89.6%), zinc (96.3%), Calcium (94.6%), and Cu(47%). Although, in general the three ethnics have different eating habit, in this study farmers have similar habit. Among the ethnics, the most inadequate intake observed in farmers of Makassar. Urine analysis showed that only small amount of farmer experienced iodine deficiency (33.6%) and had abnormal urine thiocyanate concentration (19.8%).

The present result gave a picture of the vulnerability of farmers toward adverse effect from their job. To face not only heavy working load but as well the pesticide exposure, farmers should provide their selves good health condition. It could be gained from adequate nutrition intake. It is recommended to local health services office to include some programs which target on farmers health.

Keywords: Nutrient Intake, Java, Makassar, Sunda

THE TENGGER'S TRIBE FAMILY: HOUSEHOLD FOOD SECURITY, CARING PRACTICES AND FAMILY WELL BEING

Dwi Hastuti¹, Drajat Martianto, Melly Latifah and Neti Hernawati

College of Human Ecology, Bogor Agricultural University, Indonesia

¹Department of Family and Consumer Sciences, College of Human Ecology, Bogor Agricultural University.

dwhastutiipb@gmail.com or tutimartianto@yahoo.com

ABSTRACT

The study was conducted among Tengger's families in Mount Bromo's area, at District of Probolinggo (Ngadas village, Wanatara, Jetak and Ngadisari), East Java Province, Indonesia, involving 120 families who had 2-6 years old children. Majority of families were horticultural farmer, they felt secure in term of food security and never experienced food insecurity even during eruption of Mount Bromo in year 2011. There was indigenous social security net in the community called "berasjimpitan" or "arisan"- a social saving mechanism that collected money or rice equal to 2.5 kg or 7 cup of rice weekly. Based on anthropometry measurement (height per age), there were 39.2 percent stunting children. Posyandu activities for nutrition counseling and education need to be implemented regularly, by involving respected shaman ("dukunadat") and health-medical staff (doctor and midwife), especially to change their belief system regarding un-appropriate food taboo. Caring practices related to feeding practice considered to be low (40.8%) and moderate (51.7%), since mothers frequently giving street food and a few variation of food to their children. In term of breast feeding there was still 76.7 percent of mothers breast fed unexclusively their children. There was 20.2 percent of families classified to be poor according to East Java Province of poverty line. However Tengger families admit to moderately satisfy and very satisfy to socio-economic dimension of welfare. There were 56.5 percent of child aged 2-3 years old classified low in their life style while among child aged 3-6 years it was only 13.4 percent. However psycho social stimulation practices (measured by Home Observation Measurement of Environment (Caldwel & Bradley 1986) were considered moderate and low. It was recommended to educate mothers for appropriate feeding practices, for reducing street food consumption, and for a better healthy -clean life style, and better psycho social stimulation.

GENDER, FAMILY, AND INTRA-HOUSEHOLD ALLOCATION OF FOOD IN TWO COMMUNITIES IN THE HIDDEN HIMALAYAS, HUMLA DISTRICT, NEPAL

Donya Sarah Madjdian, M.Sc.
Wageningen, The Netherlands

Supervisors:

Prof. H.A.J. Bras, Wageningen University, The Netherlands

J. Van den Bergh, M.Sc., Country director the Nepal Trust, Nepal/UK
Donya.madjdian@gmail.com

ABSTRACT

During the last decades, the focus of food and nutrition security research and practice has shifted from availability issues to chronic problems of inadequate access, and unequal distribution at the household level. Besides economic and socio-demographic factors, family systems and gender might influence Intra-Household Food Allocation (IHFA), and thereby the nutritional and health status of individuals within households, which has received only little attention. This study focuses on the extent to which IHFA influences the health and nutritional status of women in Humla district, Nepal, and indirectly their children, and which factors, including ethnicity, family type, and gender, are determining in this respect. Humla, an isolated district in the far west corner of Nepal, was chosen as research setting due to its unique location and food insecurity situation. Hindus and Tibetan Buddhists live in separate villages with the former mainly living in nuclear families, and the latter living mainly in extended households, and sometimes polyandrous families. In four villages, a total of thirty semi-structured interviews were conducted with 15 Buddhist *Nyinba* women, and 15 Hindu women either belonging to the higher *Chhetri* (n=7), or lower *Dalit* (n=8) caste group. Additionally, anthropometric data of women and their children were collected. In general, women from nuclear families were worse off than women from extended families in terms of nutritional outcomes. *Nyinba* households owned land and felt food secure. Gender and food beliefs during the immediate post-partum period influenced IHFA as was evident in serving order and decision-making processes regarding food. Although younger women in extended households were subordinate to men and senior women, this did not affect the nutritional status of these women and their children. Hindu households were food insecure, and ethnicity, culture, and gender influenced IHFA practices through serving order, food division, and proscribed food and practices. Women and adolescent girls were subordinate to men and small children, and ate lastly and mainly leftovers. These practices negatively influenced health and nutritional outcomes of many *Chhetri* women (average BMI 19, MUAC 23.4), but mainly *Dalit* women (average BMI 18.3 or MUAC 21) and indirectly their children (chronic under nutrition over 80%).

LIST OF PARTICIPANTS AND GUESTS

| NHF PROJECT CODE | NAME | | CONTACT DETAILS | |
|------------------|------|----------------------------|---|---|
| | | | EMAIL | ADDRESS/ OFFICE |
| ID158 | Mr. | Parasmani Dasgupta | paras@isical.ac.in; paras709@gmail.com | Indian Statistical Institute, 203 B.T. Road, Kolkata 700108, India |
| IN242 | Ms. | Dini Ririn Andrias | | |
| IN244 | Ms. | Cesilia Meti Dwiriani | cmetid@yahoo.com | JL Pengadilan GG Baru #47 Pabaton, Bwa Banat Indonesiaogor West Java, Indonesia 16121 |
| IN248 | Ms. | Karina Rahmadia Ekawidyani | karina_rahmadia@yahoo.com.id | KomplekGriyaMelati 2 Blok E2 #5 Bubulak, Bogor, West Java, Indonesia |
| IN255 | Mr. | Naufal Murahhan Nurdin | naufalmn.ipb@gmail.com | JLBEO #7 Tanah Sared Bogor Jawa Barat Indonesia |
| IN258 | Ms. | Betty Yosephin | patricknmom@yahoo.co.id | PerumahanKebun Raya Residence Bogor Indonesia |
| IN215 | Ir. | Yaktiworo Indriani, Msc Ir | yakti_indriani@yahoo.com | JL Kavling Raya IV Nomor 8 Rajabasa, RT 13 Bandar Lampung 35144 Indonesia |
| IN231 | Mr. | Ali Khomsan | erlangga259@yahoo.com | Perumahan Tanah BaruJalanTeralai Blok B #59 West Java, Indonesia |
| IN237 | Ms. | Leily Amalia Furkon | leilyamalia@yahoo.com | Sinbad Green Residence, Blok B2/11, JL. KH. Abdullah BinNuh, Bubulak, Bogor, West Java, Indonesia |
| IN256/ IN236 | Ms. | Winati Wigna | winatiwigna@gmail.com | |
| IN239 | Mrs. | Isma Widiaty | isma@upi.edu | JL PondokDamai B17 RT06/16 CipageranAsri Cimahi-40511, Bandung, Indonesia |

| | | | | |
|-----------|------|-------------------------|---|--|
| IN246 | Ms. | Nurul Muslihah | nurul_muslihah@yahoo.com | KK Bogor Kampus IPB Dramaga 13318 |
| IN252 | Ms. | Ratna Purwestri | purwestri@yahoo.com | UntereGarten 17, 70771-Leinfelden-Echterdingen, Germany |
| IN232 | Ms. | Dwi Hastuti | tutimartianto@yahoo.com | PerumahanTamansariP ersadaJalan KH SolehIskandar Blok B3/10, Bogor 16166 Indonesia |
| FW IN 037 | Mr. | Eden Frunt | edenfrunt@hotmail.com | Admiraliteitslaan 940 5224 EW's- Hertogenbosch, The Netherlands |
| IN251 | Ms. | Hasnawati Amqam | nana_azzahra@yahoo.com | PermataDepok Regency Cluster Ruby D8-22 Depok, Jawa Banat, Indonesia |
| IN220 | Mrs. | Rita Patriasih | harpabiru@yahoo.com | |
| IN242 | Mr. | Annis Catur Adi | annis_catur@yahoo.com | |
| IN229 | Mr. | Yosef Arihadi | yosef.arihadi@recoftc.org | |
| IN230 | Ms. | Melissa Q. Navarra | melissa.navarra@wur.nl | Informal Settlers Families Programme, Presidential Commission on Urban Poor Office of the President |
| MM254 | Mr. | Khun Bala | khunbala5@gmail.com | |
| NP187 | Mr. | Hom Nath Gartaula | h.gartaula@uwinnipeg.ca | International Development Studies, Canadian Mennonite University, 520 Portage Ave., Winnipeg, MB, Canada R3C 0G2 or 91 Thorndale Ave., Winnipeg, MB, Canada R2M 1C7 |
| PH253 | Ms. | Ma. Theresa M. Talavera | mtmtalavera@yahoo.com | Institute of Human Nutrition and Food College of Human Ecology UP Los Banos Laguna Philippines |
| PH221 | Dr. | Julieta B. Dorado | mvc@fnri.dost.gov.ph c/o Dr. Mario V. Capanzana, Director | 138 BrgyDayapCalauan Laguna or Food and Nutrition Research Institute-DOST BicutanTaguig City |

| | | | | |
|-------------------------|-----|---------------------------|---|--|
| PH224 | Dr. | Dinah Corazon Licyayo | main@ifsu.edu.org c/o Dr. Serafin L. Ngohayon, University President | Ifugao State University, Lamut , Ifugao |
| PH217 | Dr. | Teresita Allig | main@ifsu.edu.org c/o Dr. Serafin L. Ngohayon, University President | Ifugao State University, Lamut , Ifugao |
| PH234 | Mr. | Robert Ngidlo | main@ifsu.edu.org c/o Dr. Serafin L. Ngohayon, University President | Ifugao State University, Lamut , Ifugao |
| PH233 | Ms. | Dalen Meldoz | d.meldoz@yahoo.com | Northern Philippines Root Crops Research and Training Center (NPRCRTC)-Benguet State University, La Trinidad, Benguet |
| PH206 | Ms. | Maria Fatima Dolly Reario | dreario@hki.org | |
| PH233 | Ms. | Betty T. Gayao | btgayao@yahoo.com | Northern Philippines Root Crops Research and Training Center (NPRCRTC)-Benguet State University, La Trinidad, Benguet |
| PH206 | Mr. | MD Aminuzzaman Talukder | ZTalukder@hki.org | 67 Pilkington Drive, Toronto, ON Canada M1L046 or Helen Keller International Road #3Z43 Street 466 SangkattonleBassac Khan Chankar Mon Phnom Penh Cambodia |
| FW NP 039 | Ms. | Donya Madjdian | donya.madjdian@gmail.com | |
| Keynote Speakers | | | | |
| | Dr. | Emy Balatibat | b.emelita@yahoo.com | Tel.: 049-536-6096 |
| | Dr. | Julie Roa | Director | PhilRoots, Visayas State University, Baybay, Leyte |
| | Dr. | Mario V. Capanzana | mvc@fnri.dost.gov.ph Director, FNRI | |
| NHF Board | | | | |
| | Mr. | F.P. De Rooy | fpderooy@bart.nl | |
| | Ms. | Elly Leemhuis-de Regt | elly.leemhuis@minbuza.nl | |
| | Ms. | Anke Niehof | anke.niehof@wur.nl | |

| | | | | |
|--|-----|--------------------------|-----------------------------|--|
| | Mr. | Ijsbrand Dijkstra + wife | ijsbrand.dijkstra@xs4all.nl | |
| | Mr. | Joep Bijlmer | joepbijlmer@hotmail.com | |
| | Ms. | Joke Manders | jmanders@femconsult.org | |

USEFUL ADDRESSES

NATIONAL EMERGENCY NUMBERS 117

PNP HOTLINE

Tel.: 422-5515 / 0920-917-5220

THE FOREST LODGE HOTEL

Camp John Hay, Baguio City, Philippines, 2600

Tel.: (075) 424 0950

Northern Philippine Rootcrops Research and Training Center

(NPRCRTC) – Benguet State University

KM 6 La Trinidad, Benguet, Philippines, 2601

Tel. Fax: (074) 422-2439

BAGUIO POLICE

City Market, Baguio City, Philippines, 2600

Tel.: 442-8934

VICTORY BUS LINER

PNR Compound Baguio City, Philippines, 2600

Tel.: (6374) 448-7755

NOTRE DAME DE CHARTRES HOSPITAL

25 General Luna Road, Baguio City Philippines, 2600

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Gov. Pack Road, Baguio City, Philippines, 2600

Tel.: 074-442-709-14

Fax: 074-442-88-48

dotcar@pltdtdsl.net