GREAT Women Project

Promoting Occupational Safety and Health Among Microenterprises in Metro Naga

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Philippine Commission on Women

August 2012

Canadian International Development Agency | Agence canadienne de développement international

Promoting Occupational Safety and Health Among Microenterprises in Metro Naga

Building Capacities on Women's Economic Empowerment

Summary

The case study features studies conducted by the Department of Labor and Employment-Occupational Safety and Health Center on five predominant livelihoods for women in Metro Naga sites. These studies also presented working conditions, perception on occupational safety and health, and experiences on work-related injuries and illnesses. Its results are guiding DOLE-OSHC in designing advocacy and capability building packages for the application of occupational health and safety standard practices among women microentrepreneurs.

Occupational Safety and Health and the GREAT Women Project

The Occupational Safety and Health Center (OSHC) is an attached agency of the Department of Labor and Employment (DOLE) that serves as the national authority for research and training on work safety and health. It is mandated to protect workers from work-related accidents and illnesses and promote their welfare through implementation of OSH programs that will enhance productivity and reduce occupational accidents and illnesses.

In 2008, under the Gender-Responsive Economic Actions for the Transformation of Women (GREAT Women) Project, the Philippine Commission on Women (PCW) partnered with OSHC to conduct training and advocacy activities on occupational safety and health (OSH) for women workers in Camarines Sur.

OSH in the Informal Sector and Microenterprises

Occupational safety and health is a broad discipline seeking "to increase productivity through better working environment, decrease in manpower and economic losses caused by occupational accidents, injuries and diseases, and to improve welfare of workers and their families."[1]

The Philippine informal sector is estimated to have about 25 million workers, making up 76% of the country's total workforce. A survey of the informal sector in the Philippines in 2008 estimates that there are about 3.5 million women in the informal sector (National Statistics Office).

Informal sector workers are often exposed to precarious conditions of work, low wages, poor working conditions, limited social protection and health care benefits. A significant proportion of these workers are micro-entrepreneurs, home-based workers (including subcontracted, own account workers and self-employed), vendors, small transport operators (tricycles, pedicabs and bancas), petty retailers, which are mostly women and children.

The OSHC sub-project began with the comprehensive profiling of OSH conditions of microenterprises and livelihoods in the informal sector in Metro Naga, one of the

Footnote:

[1] Definition on Occupational Safety and Health was taken from the National Occupational Safety and Health Medium-Term Plan Brochure

project's target areas. The profiling supported the development of case studies and an occupational safety and training needs assessment (TNA) of workers in microenterprises and livelihoods in the informal sector.

Profiling women's livelihoods in the informal sector and microenterprises

The case studies, in particular, were aimed at: (1) determining and evaluating the safety and health hazards in the workplaces of microenterprises and livelihoods, and (2) determining the prevalence of job-related accidents, health symptoms and illnesses experienced by workers. These cases were developed through the conduct of safety and health audits, guided interviews with workers, and focused group discussions among community leaders and local government officials. The safety and health audits, in particular, included a walk-thru survey of selected livelihood trades, individual interviews and work environment measurements of noise, illumination, ambient temperature, and chemical and dust levels in various workplaces.

The TNA, on the other hand, was aimed at designing appropriate training programs that will build competence on OSH among women in microenterprises and livelihoods in recognizing and controlling hazards, and protecting themselves from the adverse effects of occupational health risks.

Six Metro Naga municipalities and their corresponding microenterprises were profiled, and these were Milaor's and San Fernando's sea grass or agas processing and production; Bula's bamboo processing, furniture and handicrafts; Gainza's crab paste processing; Pasacao's smoked fished or tinapa making and Pili's pili nut processing. Majority of these enterprises are home-based.

A total of 103 respondents were profiled from the different project sites in Metro Naga. Majority of the workers is female (76 or 74%) in agas processing; pili and crab paste manufacturing; and, bamboo craft making enterprises; males were present in smoked fish processing.

Over a third of the respondents were able to have some elementary (33%) and high school (36%), while some 13% took up vocational courses. Respondents' ages ranged from 16 to 64 years old, with nearly half belonging to the 31 to 45 years old age bracket.

Workers in fish and agas processing as well as bamboo craft production averaged 15 to 19 years in their craft, while those in crabpaste making and pili nut manufacturing averaged 5 and 9 years, respectively. They worked for an average of eight (8) hours a day, within a seven-day work week.

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Sea grass or agas processing is the most common microenterprise activity in Milaor and San Fernando. Processing comprises of sun-drying and treatmentby burning sulfur fumes to prevent fungal growth, then braided and strewn into slippers, bags, baskets, picture frames and other products.

Milaor and San Fernando, collectively, have 658 hectares of agas. About 155 families produce braided sea grass, while 18 families produce handicrafts from such. On the average, a family of four can produce around 2 dozen pairs of slippers a day. With proper machinery and tools, production per family can increase from 10 to 12 dozen pairs of slippers per day.

Market for sea grass-based handicraft products are Daet, Naga City, Iriga City, Legazpi, Tabaco City and Sorsogon in Bicol; outside the region, markets are Laguna, Quezon Province, Metro Manila and Boracay. Institutional buyers such as major malls and tourist shops also serve as additional markets. Workers in agas processing were either paid on a per-metric length of agas braiding, on allowance, or on commission basis.

The Municipality of Bula, on the other hand, is into bamboo processing and crafts manufacturing. Bula, known as the Bamboo Village of the Philippines, has 28 out of its 33 barangays into bamboo planting, with 470 hectares growing a variety of bamboo species. It produces more raw bamboo materials than finished bamboo products, as only an estimated of 244 persons or approximately 20 from around 80 families are engaged in bamboo crafts manufacturing.

Crab paste production is a flagship enterprise in the municipality of Gainza. The excellent quality of crab meat and its abundant supply make it a viable enterprise for households. Raw materials for crab paste are *talangka* or small crabs abundant in the Bicol River during the breeding months of June to November.

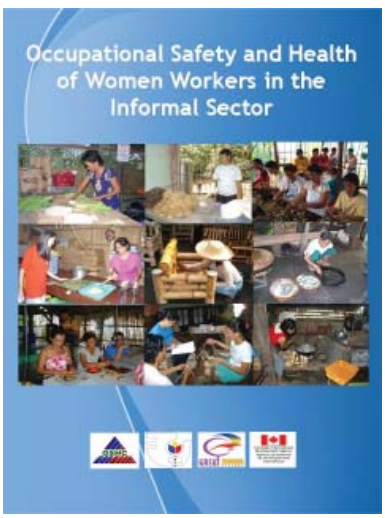
Crab paste production is mostly home-based, collectively employing some 370 workers, 210 of which are women. Men perform production tasks such as washing, blanching, cooking and extracting of crab meat while women are into removing shells and cleaning production areas, tools and equipment. Crab paste workers are paid either on a per-hour or per-piece basis.

Fish processing activities are mostly confined in the Municipality of Pasacao owed to its municipal port which led to the emergence of micro-scale fish processing enterprises. Both fresh and processed fish (dried or smoked) are sold in local markets. Smoked fish processing is usually a family-based enterprise, engaging husbands and sons in fishing, while wives and daughters process and/or sell the fish catch. Its workers are either paid on quantity basis, on a per piece rate basis and on a daily basis.

The Municipality of Pili, on the other hand, is widely known for its food delicacies made from rice and pili. Food processing operations are mostly microenterprises that have started way back in the early 1970's through the Department of Agriculture's Rural Improvement Club (RIC) trainings.Food delicacies are marketed to neighboring towns and cities. Mode of payment either ranges on a piece rate, per hour/day/month or on a per order basis.

Findings from the profiling of microenterprises. Below is the summary of the findings from the profiling of microenterprises in Metro Naga:

- Respondents have, generally, little awareness on occupational safety and health.
- Sharp-edged tools were found by majority of workers to be the likely causes of work accidents.
- Occupational hazards faced by workers included elevated sound levels in pressing and production areas, inadequate lighting in cooking/packing/pressing areas; exposure to dust and fumes; static postures such as prolonged sitting, standing and squatting, and other posture extremes. Perceived hazards vary in the different sectors depending on the type of work process. Ergonomic factors such as risk hazards were common in all types of workplaces. Many non-specific symptoms, however, were felt by workers which are not all work-related and workers' domestic chores may have contributed to such symptoms.
- Living and working areas are one and the same for many enterprises, creating continuous exposure to occupational hazards with the tools, chemicals, and other materials used.
- Health complaints raised and experienced by workers were muscle complaints, joint pains, headaches, difficulty in breathing, numbness, and dizziness. Few respondents report actual accidents. Finger cuts are the most frequently reported type of work-related accidents.
- Illumination requirements may vary in a workplace, depending on the work activity in the area however, majority of the enterprises profiled fall below the prescribed minimum lighting level of 300 lux.
- When the Wet Bulb Globe Temperature (WBGT) Index, the index that measured workers' exposure to heat, was applied to crab paste production, pili processing and smoked fish processing, these enterprises slightly exceeded the screening criteria for heat stress exposure of 29.5°C for light workload and continuous work.



- Enterprises surveyed in the case studies had their particular occupational safety hazards as described below:
    - o Furniture-making using bamboo exposes workers to organic solvent concentrations in the air.
    - o Crab paste manufacturing, among other enterprises, have the highest noise levels, while footwear manufacturing and bamboo craft and furniture manufacturing have the lowest noise levels.
- Common wastes produced out of production and processing are trimmings, empty bottles, bamboo cuttings and shavings, cellophane, crab shells, and other ingredients scraps. Wastes are disposed in landfills, garbage bins, and waste areas near the house which are either collected or burned as fuel.

Comparative Table of Safety and Health Profiles of Microenterprises in Metro Naga

Components of the profiling	Microenterprises and Municipalities				
	Sea grass processing (Milaor and San Fernando)	**Bamboo processing and crafts (Bula)**	**Crab paste manufacturing (Gainza)**	**Smoked fish making (Pasacao)**	**Pili nut processing (Pili and Naga City)**
Tools used	Scissors, knives, cutters, hammers, bench grinders, hand looms and molders.	Large knives, hand-saws and hammers.	Bamboo stick, hand scooping tool, crab press, ladle and net.	Knives, ladles and kitchen tools.	Kitchen utensils such as ladles, knives and scissors.
Work environment					
a. Noise	Noise level did not exceed the 90 dB (A) Permissible Noise Exposure (PNE) Level for an 8-hour working exposure per day.	Noise level measurement was also low.	Slightly exceeded the Permissible Noise Exposure Level (PNEL) of 90 dB(A) for an eight-hour working exposure per day.		
b. Illumination	Did not reach the prescribed minimum illumination level of 300 lux.		Did not reach the prescribed minimum illumination level of 300 lux.	Low illumination levels, ranged from 16 to 89 lux, below the prescribed level of lighting of 300 lux.	Low illumination with lux levels ranging from 39 to 295.

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c. Ambient temperature	Work areas were enclosed but had open doors and windows; had natural ventilation, resulting to slow dilution of the airborne contaminants. Ambient temperature was at 30°C with a relative humidity of 78%.	Open area.	Semi-enclosed with natural ventilation and adequate air movement. Ambient temperature was 33°C with a relative humidity of 62%. Exceeded the Screening Criteria for Heat Stress Exposure of 29.5°C for light workload and continuous work.	Semi-enclosed, work area had ambient temperature at 30°C and a relative humidity of 77%. Ambient concentration of carbon monoxide was high in cooking areas, exceeding TLV of 50 ppm. Met the Screening Criteria for Heat Stress Exposure of 29.5°C for light workload and continuous work; with adequate air movement, meeting the prescribed air movement range of 0.25 to 0.75 meters per second.	Closed area with open doors and windows; ambient concentration of carbon monoxide in Naga exceeded the TLV of 50 ppm. Levels of carbon monoxide ranged from 125 to 258 ppm in areas with open windows, levels were higher from 380 to 500 ppmin areas with closed windows; slightly exceeded the Screening Criteria for Heat Stress Exposure of 29.5°C for light workload and continuous work. Areas with windows had adequate air movement, ranging from 0.25 to 0.75 meters per second while areas that only had small openings had inadequate air movement, which confined smoke from cooking. Had ambient temperature at 29°C with a relative humidity of 93%.
d. Chemical and dust levels	Exposure to dust (from dried agas) and sulfur fumes treatment.	Dust from bamboo shavings, varnish vapors and heat in the assembly area. Ambient concentrations of respirable and total dust measured for eight hours were very low. Organic vapor from toluene (a solvent for paints and coatings) did not exceed threshold limit value of 100 ppm.			

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e. Personal protective equipment (PPEs) for workers	Did not wear any personal protective equipment.	Did not wear any personal protective equipment.	Hair nets and aprons.	Did not wear any personal protective equipment.	Did not wear any personal protective equipment.
f. Health complaints	Muscle pains or stiffness, joint pains, eye irritation from exposure to sulfur fumes, eye strain during braiding and sewing of agas products, running nose and nasal irritation caused by rugby vapors, numbness or tingling of the extremities due to static postures that numb immobilized body parts, and headache from heat.	Muscle pain or stiffness and joint pain. Headache, eye irritation, coughing and numbness or tingling of the extremities.	Musculo-skeletal symptoms, and non-specific symptoms of headache, runny nose and eye irritation.	Muscle pain/stiffness, joint pain, eye irritations and coughing. Other health-related complaints include runny nose, difficulty in concentration, irritability, headache, and numbness or tingling of extremities.	Muscle pain/stiffness and joint pain, headache, numbness or tingling of the extremities and runny nose.
g. Ergonomic risks	Prolonged sitting, carrying bulky loads (braided agas or salapid, bags with finished products) and repetitive hand movements.	Frequent bending of knees and waist, prolonged sitting, over-reaching and carrying heavy loads of bamboo poles and furniture weighing more than five kilos.	Prolonged sitting, repetitive hand movements and carrying heavy loads	Prolonged sitting, prolonged sitting, carrying loads and repetitive hand movements.	Prolonged sitting/standing, repetitive hand movements and carrying loads.

Recommendations to occupational safety and health of workers in microenterprises in Metro Naga. Given the results of the profiling of microenterprises, several recommendations were provided by OSHC:

- To improve lighting conditions in areas with low illumination levels, position work activity or worktables just below the light source or near windows to maximize use of daylight. Lamps and reflectors should be cleared of dirt, which could diminish illumination levels.

- Several improvements may be adopted to reduce workers' exposure to heat. In cooking areas, provide a canopy or enclose the upper portion of the cooking area to serve as hood to convey smoke and hot air outside the workplace. Processes or activities that generate heat should be conducted in an open area. Natural ventilation should be increased by opening windows and entrances. Workplace ventilation may be improved with the use of mechanical ventilating fans in work areas where majority of workers stay. Mechanical ventilation can also dilute more effectively whatever contaminants are present in the work area. Workers should also wear cotton-type clothes.

- Enterprises in furniture-making, such as bamboo craft manufacturing, need to lower high airborne concentrations of toluene, an important solvent for paints and coatings, which poses risks of neurological impairment and intoxication when inhaled.

- Agas and furniture manufacturing need to be regularly monitored for respirable dust concentration, which refers to the amount of particles that penetrate deep into the lungs upon inhalation.

- Pili processing and smoked fish processing should be particularly monitored for ambient concentration of carbon monoxide, a colorless, odorless, tasteless, poisonous gas is produced by incomplete burning of carbon-based fuels, including gas, oil, wood and coal.

- Enterprises with high-noise levels should provide their workers with earplugs, while rubber footing is recommended for noise-ridden machines, such as the crab press machine.

"After we have developed occupational safety and health modules of the GREAT Women Project, which is looking at the safety and health conditions of women microentrepreneurs, we have adopted the same policy as institutionalizing safety and health of the marginalized sector outside GREAT Women sites.

What we did was, we have tandemed with the regional offices of the Department of Labor, the regional offices are the ones giving out the livelihood programs and projects.

We integrated capacity-building in the form of conducting safety and health training for this marginalized sector. We believe that women's economic empowerment is not just giving out economic benefits, moreso, we also do not want to compromise the safety and health of these women. "

Mr. Rey Jose Soriano
Media Production Specialist
Training and Public Information Division
DOLE-OSHC

About The Project

The Gender Responsive Economic Actions for the Transformation of Women (GREAT Women) Project is a governance and capacity development project that aims to promote and support a gender-responsive enabling environment for women's economic empowerment, particularly those in microenterprises.

The Philippine Commission on Women (PCW), the national machinery for the advancement of women in the Philippines, is the lead executing agency for the Project.

The Commission forged partnership with key national government agencies involved in micro-, small- and medium-scale enterprise (MSME) development and select local government units to create a gender-responsive enabling environment for women's economic empowerment. This project receives technical and financial support from the Canadian International Development Agency (CIDA).

GREAT Women Project
Management Office
Philippine Commission on Women
1145 J. P. Laurel St., San Miguel, Manila
1005 PHILIPPINES
Tel. No. (+63-2) 734-1731
735-1654 loc. 123
Fax No. (+63-2) 736-4449
Website: www.pcw.gov.ph