

Jul-2011

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Jinky Leilanie Lu

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Recommended Citation

Lu, Jinky Leilanie (2011). Relations of Feminization of Agriculture and Women's Occupational Health: The Case of Women Farmers in the Philippines. *Journal of International Women's Studies*, 12(4), 108-118.

Available at: <http://vc.bridgew.edu/jiws/vol12/iss4/7>

Relations of Feminization of Agriculture and Women's Occupational Health- The Case of Women Farmers in the Philippines

By Jinky Leilanie Lu¹

Abstract

This study on women in the Philippines, particularly in Benguet which is the largest vegetable producer in the country, was undertaken in order to provide a wider interpretation of the contribution of women farmers to agricultural productivity, as well as to look into the relations between feminization of agriculture, and women's occupational health. Methods employed in this study included personal interviews to look into the knowledge, involvement, and contribution of women in agricultural farming as well as a survey to look into women's perceived occupational health issues and healthcare provision by the local government. The study showed that women play a key role in farming activities including seeding, weeding, pesticide application, harvesting, and marketing of crops. Women are regarded by men in Benguet as integral partners in farming, and they hold and control agriculture-derived incomes. The study showed that ill health of women farmers is affected by the trends and processes of feminization in the agricultural sector. Health policies and programs therefore cannot be separated from considering how economic production affects women's health. Health should be understood within the context of economic production and relations of production.

Keywords: feminization of agriculture; women's occupational health; Philippines

Introduction

Gender-based norms vary across cultures. Almost all cultures are unfavorable to women, situating them in disadvantageous positions in relation to men (Singh et.al., 2009). Gender biases influence how work is recognized, valued and supported with consequences at the aggregate and personal level (George, 2007). In this study, women's work issues were investigated in order to have an understanding of gender issues in this agricultural part in the Philippines.

In many communities, farming is generally considered to be men's work, particularly when it is market oriented (Zakaria et.al., 1998). However, the number of females participating in agricultural sector has been increasing. In Canada, 25 per cent of the farm owners are women, and 47 per cent of females comprise the enumerated farm population. In the said study population, half of the rural women are homemakers yet are also involved in farm activities (Dimich-Ward et.al., 2004). In China, women constitute about 70 per cent of the agricultural labor force and perform more than 70 per cent of farm labor. In India, 75 per cent of all women workers are in agriculture (Kelkar, 2009). Even in comparison with other business segments, women's participation in agriculture is relatively increasing (Meeker et.al., 2002).

McCoy et.al., (2002) noted that women do not only participate in traditional roles but they also work with their husbands in farming. Meeker et.al., (2002) stated in their study that women are directly involved in farming operations. In addition, Ilcan (2002) reported that women in Turkey perform labor-intensive operations such as ploughing,

¹ Research Professor 7, National Institutes of Health, University of the Philippines Manila (UPM)

hoeing, planting, weeding, and caring for and feeding animals, and harvesting wheat and corn.

Women are essential in economic development, especially in rural agricultural economies but they face specific constraints (Njuki, 2010). Evidence from many countries show that women usually do not benefit automatically from agricultural development projects (Holmes and Slatter, 2007). This is also evident even in the provision of agricultural extension services, access to credit, agro-technological innovations, technology transfer, and land rights (Singh et.al., 2009). According to Danso et.al., (2004), the power to access and control tangible and intangible resources, as well as in the division of labour at the household level and among farming activities are highly gendered. Although women play a central role in food production and food security, they are still underdog in terms of access to productive resources, extension services, marketing, information and credit.

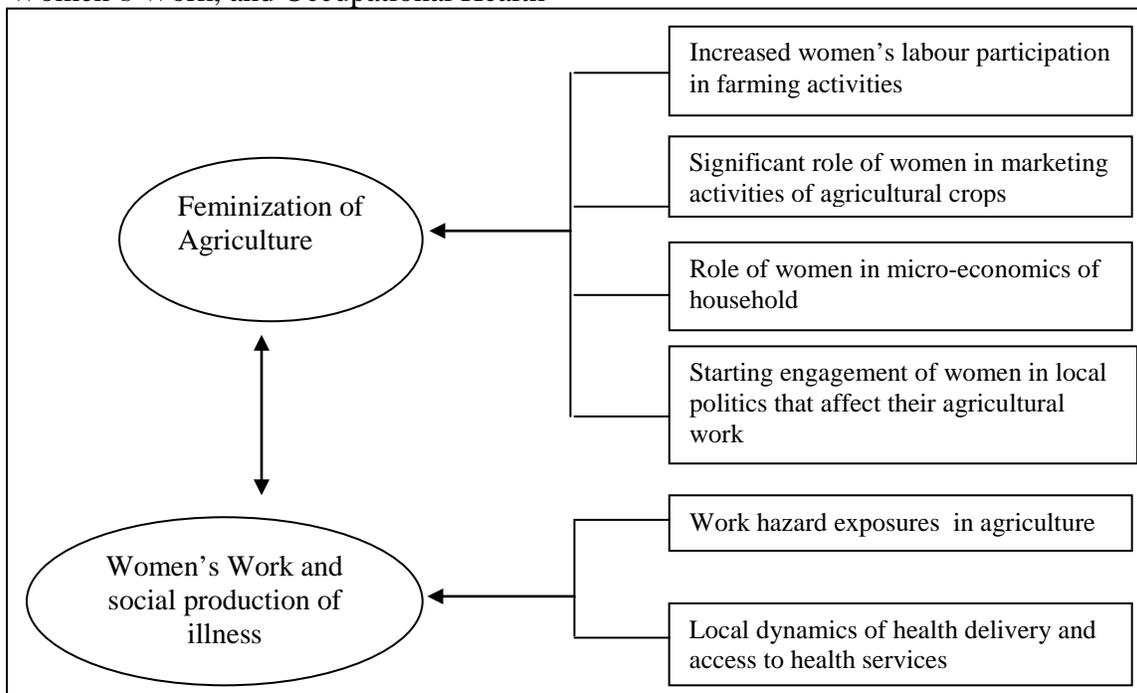
The objective of the study is to collect, interpret, and analyze the information on agricultural women, and their work and occupational health issues. The role of women in agriculture in Benguet province in the Philippines is emphasized in this study.

Methodology

The study focused on Benguet province where most women are engaged in crop production. Women in this province are also involved in pesticide application, weeding, fertilizer application, harvesting, and trading. The survey data was taken from a pool of surveys consisting of Benguet farmer population. This manuscript arises from an overall project on the development of geographic information systems of pesticide exposure of farmers that was given ethical clearance by the Ethics Review Board of the National Institutes of Health.

The conceptual framework of the study is shown in Figure 1.

Figure 1. Conceptual Framework of the Discourse on Feminization of Agriculture, Women’s Work, and Occupational Health



Results and Discussion

For the survey data of 251 women farmers, the ages were 15-78 years old. Most were aged 36-50 (49.4 per cent). Almost thirty two percent (31.9 per cent) of the women farmers were able to finish or at least reach high school level, 34.3 per cent reached grade school, 22.3 per cent reached the collegiate level, 4.4 per cent underwent vocational studies while about 1.6 per cent was able to reach post graduate education.

Regarding usage of pesticides by the household members, 59 per cent said that other members in the family were exposed to pesticide. Children under 18 years old were also found involved in pesticide and farming (23.8 per cent).

The longest used pesticide was Manzeb, a carbamate, for a duration of 20 years, followed by Chix, a pyrethroid, for 19 years, and then by Tamaron, an organophosphate, for 18 years. The pesticides used in largest amount were pyrethroid at an average of 11 liters per application. This was followed by Manzate, a carbamate, at 10 liters.

Due to the dominance of women in agriculture in Benguet, the profile of their occupational health issues were looked into. The data showed that almost half of the women farmers in this study got sick (47.4 per cent) but only 21 per cent received medical attention. More than half (59.4 per cent) perceived that their illness was contributed by their occupational hazard exposures in farming. The self-reported respiratory symptoms of the farmers were coughing (55 per cent), difficulty of breathing (20 per cent), breathlessness (23.3 per cent) and pulmonary secretions (18.5 per cent). Chest pain (40.8 per cent) was the most common cardiovascular symptom followed by palpitations (26 per cent) and calf pains (15.8 per cent). One hundred twenty two or 30.5 per cent complained of having skin itchiness, sweating (12.8 per cent), skin rashes (12.5 per cent) and easy bruisability (5.8 per cent).

Division of labour and responsibilities in farming and farming-related activities

In the year 2004, female household members who were engaged in any agricultural activity in Benguet, numbering 129.9 thousand, outnumbered their male counterparts by 45.7 thousand (NSO, 2004). This shows that the agricultural landscape in Benguet is dominated by women, and that agriculture may be disabled in the area without their major contribution.

Based on the data, women in the area cultivate crops and vegetables in their farms. They plant vegetables in their so called "garden" which actually refers to farms. The farms in Benguet are family-owned, and none is under tutelage as can be seen in big haciendas in other parts of the Philippines. The farmers own their lands, and they do not work for big landowners. The gardens are relatively small parcels of land which are productive due to the soil type and high altitude location.

Generally, women in Benguet are integral players in farming. They are engaged in both heavy and light farming activities, like what men farmers do. They are involved in land preparation, planting, weeding, mixing, loading, and spraying of pesticides, applying fertilizers, and harvesting activities. They participate in all the stages of farming- planting, preharvesting, and post harvesting periods. In fact, women spend more time in the farm than men especially during harvesting periods. They work in their gardens for an average of six hours during non peak seasons, and up to twelve hours during peak seasons. The

women farmers are also actively engaged in farming, commercialization of their crops, and in generating income for the household.

There are only two municipalities in Benguet, at the lower part of the province, namely, Sablan, and Bukod where the men take the major bulk of agricultural work compared to the women. In these municipalities, men manage the gardens. Men perform major farm works and make decisions such as seed selection, planning for planting and harvesting periods, choosing the types of pesticides, fungicides, and herbicides to be used.

The women farmers practice cocktailing/mixing of pesticides. The type of insecticides and fungicides they use depends on the type of pests. The most commonly used insecticides and fungicides being mixed are tamaron and dithane. The reason why they do cocktailing is not to increase the effectivity of the pesticides but to save time. Mixing pesticides in one spraying duration is more efficient than applying various pesticides separately.

The women farmers spray pesticides before planting, 7 days before harvesting, and post harvest. It takes them 2-3 hours of spraying depending on their farm size. They use up to 15 loads of pesticides in a knapsack sprayer for a hectare of farm. One knapsack sprayer contains 16 liters of mixed pesticides. Some women farmers reported that they experience pesticide spills on their back, shoulders, and arms due to leaking sprayers. They complained of burning sensation and itchiness on the body part spilled with pesticide. It is therefore important for them to wear personal protective equipment like gas mask, boots, head covers, and gloves. However, most of the women farmers do not use personal protective equipment. They merely use handkerchiefs wrapped around their face, and clothes with long sleeves as protection.

In Benguet, women and men partake in marketing of agricultural crops. However, in Cabayan which is in the northern part of Benguet, it is the only the women who trade their vegetable produce. They sell the harvested vegetables in the trading posts and in the neighboring public market.

The farmlands in Benguet are valued possession of families that are passed on from one generation to the next. By tradition, these farmlands are handed down to males. In terms of access to and control over the agriculture-derived or other work incomes, women in Benguet province have more access and control over these incomes than their male counterpart. The women are responsible in keeping the income of the family. They budget the income and prioritize it according to the needs of the family.

Although men are more involved in agricultural cooperatives in terms of membership, women farmers have access to benefits afforded to these farmers' cooperatives. They are not as active as the men in agricultural cooperatives because they are heavily involved in farming.

Household activities such as cooking, washing clothes, taking care of children and general household cleaning are mostly done by females. Both the men and women farmers share in the decision-making responsibilities (i.e. education of their children, major expenses) in their homes.

Women's recognized authority in the locality

There are women's organizations in Benguet and the Cordillera Administrative Region. These are the Cordillera Women's Education and Action Resource Center

(CWEARC), and Community Health Education, Services, Training in the Cordillera (CHESTCORE).

In Cabayan, women are more involved in farming activities than the men. They play a major role in crop production. They have recognized authority in the community. They are members of the political council and are therefore part of the decision making body of the community.

The women in Cabayan have formed associations and network to take advantage of this leverage such as the *Women against Alcoholism*. The women managed to pass a local legislation on the ban of alcoholic beverages in the local area after six o'clock in the afternoon, and that men are not allowed to carry alcoholic beverages while on the streets or in vehicles even during daytime.

Women Farmer' Perception of their Health and Healthcare in the Community

The women farmers of Benguet are exposed to pesticides such as pyrethroid, organophosphates, and carbamates. These pesticides are known to cause health side effects. Medical services in the province are reported not being able to cater and provide for the health needs of the residents. The health care delivery system of the country is decentralized, but access to health services is difficult.

The women farmers reported that there is no sustained health campaign done by local governments in the community, and that healthcare facilities are inadequate. They said that the budget allocation for health is least prioritized. Agricultural programs receive the biggest budget allocation especially those focusing on increasing agricultural production for commercialization. Some women farmers also reported that with the few information campaigns that they receive, the focus is more on acute illnesses rather than their recurring health problems, and the usual approach to health management presented to them is safety at work and individual responsibility for managing their health.

Intentional and/ or accidental suicide is also a major concern in the community. In Cabayan, the environmental officer reported three deaths due to intentional pesticide poisoning for the current year. Farmers store/keep their pesticides inside their homes and are unlabelled.

Discussion

The feminization of agriculture is evident in the study site which is the largest vegetable producer in the Philippines. Even the national data in the Philippines show that female household members who are engaged in any agricultural activity in Benguet, numbering 129.9 thousand, outnumbered their male counterparts by 45.7 thousand (NSO, 2004).

Women in Benguet cultivate commercial vegetables in their gardens. They are heavily involved in all aspects of agricultural production, from land preparation to decisions regarding which crops to grow and to harvest. This is in contrast to Bangladesh where there is gendered division of labor in agricultural work. Men in Bangladesh perform labour intensive activities such as digging holes, pruning and planting species, while women are involved in watering, fertilizing, weeding, and fencing (Akhter, 2010).

Across certain countries, men's dominant role in agriculture is evident. In Malaysia, men do tasks which require great strength and energy such as slashing, falling and building fences while females perform chores that are more onerous and time

consuming (Hew and Kedit, 1987). There is also gendered division of labor in agricultural work in Pakistan. Women are exclusively engaged in cotton picking, hoeing, and weeding, while the men are involved in seed preparation, cotton ridge making, sowing of cotton ridges, hoeing, thinning of cotton plants, preparation of pesticide application, fertilizer application, and cotton stick cutting (Jamali, 2009). In India, men are usually involved in heavy workloads while women help with miscellaneous farmwork such as weeding and spraying. In China, although women spend a great deal of time and energy in agriculture, men still take charge of production. The men decide what to grow, how much to grow, and where to sell. The men also do spring ploughing, summer and fall harvesting (Kelkar, 2009).

In Benguet, women farmers are involved in marketing of their crops. We see the same pattern among women in Ghana who have generally perceived that marketing is more profitable and less risky than farming, and thus, suitable for women (Danso et.al., 2004). In Pakistan, however, marketing of vegetables is male dominated. In the study of Taj in 2009 in Pakistan, almost 90 per cent of the men are involved in marketing of the vegetables while women are involved in milk, ghee and poultry sale (Taj, 2009).

In many Asian countries, women are lacking formal rights to land ownership, (Kelkar, 2009). Wilbers in 2003 observed that traditions of patrilineal inheritance limit women's access to acquire land to live and to do subsistence farming. In Ghana, South Africa, men have greater access to land as they are traditionally considered to be the custodians of family property (Danso et.al., 2004). In Pakistan and Afghanistan, women-headed households are landless (Tibbo et.al., 2009). This is also the apparent among Ghanaian women who do not own land (Hasna, 1998).

A case study on women involved in rice industry in the Philippines also showed that women farmers engaged in rice production are small-owner cultivators, tenants or farm workers. Most of the land titles of land owning households are in the name of male spouses, despite the fact that women are mainly engaged in the production segment of the rice value chain (Reyes-Cantos and Bernabe, 2006). In Benguet, Philippines, while men are the traditional holders of land titles, women are considered vital partners in farming and have more control over agriculture-derived incomes.

Both women and men in Benguet have access to credit services. In a survey of women engaged in farming in the Philippines showed that almost 70 per cent of the women are directly involved in capital procurement. There are about 94 per cent of the women who have borrowed money from informal moneylenders, small stores, cooperatives, relatives, and other financial sources. Women borrow money more than men because they are directly managing household and production expenses (Reyes-Cantos and Bernabe, 2006).

In Benguet, the income of the family is kept by the women. Similarly, majority of the Pakistani women hold all family income from different sources, but both the women and men can spend this family income on family needs (Taj, 2009). In China, rural women also control household income (Kelkar, 2009). But in Afghanistan, males have more access and control over these incomes and resources (Tibbo et.al., 2009). Females in Afghanistan do not make decisions on major incomes except in isolated cases where they are allowed to keep incomes from sale of dairy products (Danso et.al., 2004).

In relation to household work, Benguet women farmers perform home chores with the help of their husbands. Both parents undertake joint responsibility for their

children's education, work, activities and the like. Household responsibility does not limit the Benguet women to participate in farming. But Kamara et.al., in 1993 reported that women farmers in female headed households in other societies tend to limit their labour input in farm activities due to heavy commitment to reproductive roles such as nurturing and caring for children

This study in Benguet has shown that women farmers are not paid farm workers, but co-owners of farm inputs and outputs, and have access and control over agricultural derived incomes. However, in Bangladesh, though the women make direct and equal contribution to that of men in agricultural production, their productive worth is not recognized by this male dominated society. Male-dominated society undervalues women's work by paying them then less than men with the same workload and even the same output. (FAO, 2006).

Women's Work and Occupational Health

Researches done in other countries show the unique pattern of illness among women farmers or women in agricultural work. Cancer of the breast, ovary, bladder, and cervix and diseases such as non-hodgkin's lymphoma, multiple myeloma, and soft tissue sarcoma were the illnesses experienced by women exposed to agricultural work (McDuffie, 1994). Studies of Falck et.al., (1992), Wolff et.al., (1993), and Krieger et.al., (1994) reported that the use of DDT (dichlorodiphenyltrichloroethane) was associated with breast cancer among women. The study of Engel et.al., (2005) further showed the association of breast cancer among the wives of the farmers with pesticide exposure. There was a higher risk of breast cancer found among women whose homes were near the farms sprayed with pesticides.

The study of Zahm et.al., (1992 and 1993) shows that diseases such as non-Hodgkin's lymphoma as well as multiple myeloma were associated with the use of various pesticides. Furthermore, Blair and Zahm (1995) noted that non-Hodgkin's lymphoma can be caused by organochlorine and organophosphate insecticides. Organochlorine insecticides was also noted causing diseases such as leukemia, soft tissue sarcoma, cancer of the breast, lungs, and pancreas.

In another study, multiple myeloma among women was associated with potato cultivation and increased risk was found among those exposed to potato-treated pesticides (Kristensen et.al., 1996). The risk of malignant melanoma was also related to pesticide exposure among women. Non-melanoma skin cancer developing among women farmers was found associated with farming activities specifically, planting of vegetables sprayed with pesticides (Kristensen et.al., 1996).

Other than breast cancer, other types of cancer such as colon cancer were also related to vegetable farming among women. It was also found that the risk was higher when women were exposed to vegetables treated with pesticides. Cancer in the thyroid and urinary bladder was correlated with orchard and greenhouse farming among women. Cancer in the ovary was found associated with chicken farming while cancer in the uterine body was found correlated with pig farming and grain farming (Kristensen et.al., 1996).

In this study in Benguet, respiratory ailments were reported by the women farmers. This is again consistent with data from other countries. In New Zealand, it was found that the risk of asthma through agricultural work was found higher among women (Kimbell-Dunn, 2001). It was also noted in one Danish study that there is an increased risk of

asthma-like symptoms among women involved in pig farming (Portengen et.al., 2002). Study of Kern et.al., (2001) among farmers involving women showed the prevalence of bronchitis to those who were involved in livestock farming and food packaging.

Relation of feminization of agriculture, and women's health

The growing dynamics of feminization of agriculture brings with it issues of new hazards and risks, new substances and materials, outdoor and indoor air problems, new types of physical stress, new accidents and risks, and the problems of the young feminized workforce. These new problems are difficult to diagnose with the traditional diagnostic codes. As such, the understanding of women's health requires new investigation and paradigm. Ill health cannot be adequately explained by the microbiological perspective which posits that diseases are caused by microbiological organisms and emanate from the physiologic imbalance of the body. The "social production of illness" paradigm offers a better understanding of health of the women farmers as it looks into the structural context upon which illnesses emerge. While a "specific microorganism may well "cause" a disease, it is also interesting to look into the conditions under which the microorganism would flourish (Dubos, 1960 in Moon and Gillespie, 1995). " It is related to the way society is organized in the production of illness.

The current analysis of medical science is premised on microbiological agents, as well as physiological aberrations caused by specific agents such as chemicals. The application of medical science has also been applied for the interest of certain elite groups, rather than for the victims of poor health. The social production of illness model, on the other hand, views ill health as a social construct and is generated not only by specific agents (viruses or hazards), but by the structural conditions of work, and by the structures of the economy and politics, both local and global.

Clinical medicine is also very individual-oriented focusing on the human body and specific bodily organs. The entry of community medicine, public health, occupational and environmental health into the practice of preventive medicine has redirected the person-oriented and biomedical approach of clinical medicine. This is what is needed in the local communities in Benguet, Philippines which is the site of the study. The women farmers reported that healthcare is insufficient, and there is lack of aggressive and sustained health programs. The health concerns of the local community, according to these women are neglected. Jenkins (2002) reported that the province of Benguet is lacking in medical health services and the patients from Benguet are sent to the neighboring Baguio General Hospital and Medical Center in Baguio.

Even the emphasis on acute rather than chronic illness also shows the bias in current health hazard approach adopted by local governments. Health issues of agricultural women are more chronic in nature rather than acute. Illnesses among these women are usually caused by prolonged exposure to hazards.

Environmental and occupational health is a new component in the approach to health and illness, besides the clinical and sociomedical approach. It takes into consideration the impact of the work and community environment in the etiology and pathophysiology of certain illnesses. Health analysis should consider the environment as another factor in health and illness that is profoundly shaped by economic and social factors (Freund and Mcguire, 1991).

The study has shown that ill health of women in agriculture is affected by the trend and process of feminization of the sector. Health policies and programs therefore cannot be studied and analyzed separately from the actual way of economic production of the people. Health should be understood within the context of economic production. Specifically, the health of women should be understood in the context of risks, hazards, and challenges presented by their economic production.

Conclusion

This study on the women farmers in Benguet lend credence to the feminization of agriculture. They are involved in all farming activities. The women farmers are regarded vital partners in agricultural productivity. This is a positive development in the area which may have been impacted by the active empowering activities of civil societies and women's groups.

The study has also shown that health problems and issues of the women farmers are related to their economic production. The gradual feminization of agriculture in many countries including the Philippines makes attention the need for understanding health issues within the context of their agricultural and economic production.

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