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ENVIRONMENTAL SCIENCE AND ENGINEERING

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Tropical Rainforests and Agroforests under Global Change

21

Ecological and Socio-economic
Valuations

Bogor Agricultural University



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Gender division of labor in agroforestry activities within households: a case of Wonogiri - Central Java - Indonesia

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Summary

This chapter provides a brief description on the gender division of labor in agroforestry activities within households. The introduction describes the underlying background of gender roles in agroforestry activities. In general it was found that there is an imbalance of gender partnership in labor division applied at cultivation, processing and marketing of cashew nuts between men and women. The unequal gender role has also existed at the accessibility and control levels towards collector traders and wholesale buyers; however, an equal gender role has been found at the accessibility and control towards farming activities, and the role of women is even more dominant in processing than that of men. It was also found that the unequal gender partnership at the community level is due to the socio-cultural constraints. Finally, research and policy recommendations describe the focus of research related to gender in agroforestry, the capacity building for regional and national government and also community and gender empowerment. The community and gender empowerment includes the agreement among communities (both men and women) in the village to reformulate its regional planning, the increase of women's potential skills and knowledge, and the strengthening of farmer group/institutions.

Keywords: Gender roles, gender empowerment, farming activities, agroforestry

1 Introduction

1.1 Underlying Background

State promotion of agroforestry production is widespread in Southeast Asia. It frequently aims at economic development and sometimes environmental protection, particularly in rural areas. State promotion is often on a large scale and can fail to consider or monitor the various localized impacts of promoting a particular agroforestry activity. In many cases, the emphasis is on production rather than maximizing benefits to poor farm households, which involves marketing issues such as improving bargaining power, value adding and product development.

Java is the most populous island in Indonesia, covering just six percent of its land but housing almost 60 percent of the country's 215 million or so people. Moreover, as the centre of industry and the main food production area in Indonesia, Java plays a leading role in the national economy. The government has launched a number of initiatives to ameliorate environmental degradation in Java and other parts of the country. One of them, which has been running since the early 1980s, is reforestation of upland areas through agroforestry. Through this program, the government provides materials and other support to assist upland farmers to plant tree crops such as coffee and the cashew nut. Combined with a growing market, this policy has led to extensive participation of community households in the agroforestry production.

Farmers in Java are generally small landholders using a low level of production technology and limited access to market information. They face a range of constraints including: tedious, complex and labor intensive processing; inadequate grading and packing, and a lack of market information throughout the marketing chain. In addition, they generally bargain individually with middlemen, which give them less bargaining power. Despite this, cashew production contributes significantly to a processor's family income, and is well established.

Wonogiri district is located in Central Java province at the latitude of 7°32' to 8°15', with the longitude of 110°41' to 111°18' and the altitude is about 400m above sea level. The district has the size area of 182 237 Ha (BPS Provinsi Jawa Tengah 2000). In the year of 2000, the district's population was 967 414 people (BPS Pusat 2001). This means that the population density was 53 persons per km². Most of the area of Wonogiri district is upland with very low soil fertility. Severe shortages of fresh water for drinking and agriculture at the dry season have been another problem that hinders economic development of this district. The severity of economic problems in this district has forced a significant part of its population to migrate to other areas of Indonesia, such as Jakarta and Lampung, for jobs. This has been the underlying factor behind the fact that its population density affects the socio-economic problems.

The program's environmental goal is to control soil erosion in river catchments. It is also expected to have a positive effect on incomes, particularly

through improved land productivity, water conditions, and soil fertility. Thus, the agroforestry program is also considered to be a poverty-alleviation program. Based on this reasoning, the study examines the gender division of labor within households in agroforestry activities.

2 The Objectives of the Study

The objectives of the study are:

1. To examine the gender roles in production, processing, and marketing of cashew nuts.
2. To propose strategies to improve market bargaining power of women so as to improve their contribution to their family income.

2 Literature studies

Gender mainstreaming was defined by the United Nations Economic and Social Council in 1997 as a strategy for making women's as well as men's concerns and experiences an integral dimension of their policies and programs. The Government of Indonesia's increased efforts to Gender Mainstream into its national development process is an affirmation of the commitment to gender equality and the rights of both women and men (KPP-UNDP 2007).

As a strategy, Gender Mainstreaming aims at promoting a fairer distribution of resources, opportunities and benefits of development processes and population programs. As Indonesia is now implementing a decentralized approach in the country's development, the need for mainstreaming gender concerns in local government's programs and policies has become more important (KPP-BKKBN-UNFPA 2004).

The meaning of gender is different from the meaning of the type of sex. However, both gender and the type of sex involve both men and women. The type of sex in general is applied to identify the difference between men and women from biological anatomy that it is natural. Meanwhile, gender discusses the differences of role distributions and function between men and women that are decided by the community/culture since they were born and that it is not natural. At this point, gender does not discuss women only, but also men in relation to cooperation/partnership and the role distribution between men and women to achieve the same goal. Therefore, gender discusses the problems of both men and women in society's life. Thus, gender is the community perspectives toward roles, functions, and responsibilities among men and women are a result of social and cultural constructions that can be changed along with the dynamics of time and community aspirations (KPP-BKKBN-UNFPA 2004).

The application of gender roles in the households' life is shown by the power of men and women, with women typically being the less powerful partners. The differences in power between men and women are directly related

to differences in their income and other resources. The work of women at home is unremunerated, and therefore not regarded as “real” work, and often constrains women’s opportunities to earn outside income. Thus, the public world of work is a men’s domain, but the private world of home is a women’s domain (Renzetti & Curran 1995).

Gender roles in agricultural work are influenced by the gender division of labor. In some countries women are virtually full-time farmers, while in other countries women do little work in fields. In some places, women are active farmers and work side-by-side with the men in the fields and in other places women are work separately from men in the fields (Osteergaard 1992).

3. Research methodology

3.1 Location of the study

The study was conducted at Rejosari village, located in the important cashew producing sub-district of Jatisrono Wonogiri District of Central Java, Indonesia during January-March 2006 (as part of the SEANAFE Project on Market for Agroforestry Tree Products) (SEANAFE. 2007a; SEANAFE. 2007b; SEANAFE-IPB. 2008).

3.2 Types of Information Required and Their Sources

In this study, both primary and secondary information have been used to achieve the study’s goals. The required primary information was obtained from a variety of respondents. The respondents included farmers, middlemen, processors, exporters, relevant government agencies, financial institutions, farming cooperatives and NGO’s. The respondents were interviewed in-depth, either individually or collectively through FGD’s (Focus Group Discussions). Meanwhile, the required secondary information will be obtained from various agencies (private and public agencies) and relevant publications.

3. Methods of Analysis

The information collected was analyzed by using a variety of analytical tools. The tools of analysis include descriptive analysis, by using gender analysis approach.

Gender analysis is a process for the analysis of data and information systematically about men and women to identify and indicate the status, functional role and the responsibility of men and women and its affected factors (KIP-BKKBN-UNFPA 2004).

4 Findings

4.1 The Meaning of Gender and Family

The fact that Wonogiri upland is upstream of the Solo River has been another important reason for the government to make this upland area a target for the agroforestry program. The Solo River is an essential source of fresh water for industry and people not only in Central Java, but also in East Java province. The important role of this river for the population and economic development of these provinces has, in fact, led the government of Indonesia to place the management of this river under a special management authority, called **Perum Jasa Tirta 2**.

The agroforestry program implemented in the Wonogiri upland areas has been quite successful, especially in promoting the cultivation of cashew nut tree crops on private farmland. This can be discerned from the data which highlight some aspects of cashew nut tree crops in Wonogiri district. From the data it can be seen that the area of cashew nut tree farms has increased quite significantly from 5 643 ha in 1999 to 7 738 in 2004. At the same period of time total production also has increased quite significantly, from 5 304.42 tons in 1999 to 10 833.20 tons in 2004. Similarly, average farm productivity has also increased significantly from 940 Kg/ha in 1999 to 1 400 Kg/ha in 2004.

In Wonogiri district, farmers produce cashew nuts not just for their own household consumption, but also for the market. For these small farmers the cultivation of cashew nuts tree crops on their small marginal land is for the purpose of obtaining cash income. Farmers are involved in the market for cashew nuts through selling of almost all of their production into their local market. The market for cashew nuts in this district is, in fact, growing over the last few years. This market phenomenon is reflected in the growing of cashew nuts of Wonogiri district to be shipped into overseas markets. The total of export of cashew nuts from Wonogiri district increased from 5 304 420 Kgs in 1998 to 10 833 200 Kgs in 2004. Similarly, the value of exports also increased from USD 6 129 221 in 1998 to USD 17 027 652 in 2004 (Bappeda Wonogiri 2005).

Most of these upland farmers are small-holders, with the average farm size of less than 0.50 ha. In fact, in 2004 the number of farmers that were involved in cashew nuts tree crop farming in Wonogiri district was 23 422 households. This meant that the average holding was 0.33 ha per farming household (Bappeda Wonogiri 2005).

Agriculture is one the most important sectors in Wonogiri. The contribution of the sector on regional gross domestic product (RGDP) is around 54 per cent in the last five years, followed by trade (8.7 per cent), industry (5.6 per cent). Amongst sub-sectors in the agricultural sector, the food crop is the most important, contributing to 43.7 per cent, followed by estate crops (5.2 per cent), cattle (1.9 per cent) and fishing (0.7 per cent). As mentioned

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before, the cashew nut is one of the most important crops in the estate crop sub-sector.

Wonogiri has also faced persistent problems of a high level of poverty. Based on the National Socio-Economic Survey conducted in 2004, the number of the people living below the poverty line is 272 795 people, around 24.4 per cent of total population. This poverty incidence is much higher than the national level of 16 per cent. Some other indicators of the high level of poverty in the region are the high level of illiteracy (5.3 per cent), child-mortality rate (4.6 of 1 000), and a high rate of undernourished people (4.8 per cent). With this situation, the government of Wonogiri has placed its poverty alleviation program as one of the central programs. Moreover, since agriculture is the most dominant sector, then the government has promoted agricultural development as a leading sector in combating poverty.

With a total population of 1.12 million people and a family size around 4.4 people per household, Wonogiri still faces serious problems of unemployment, although population growth has been actually very low, between 0.44–0.62 per cent per annum. The official unemployment level is 2.1 per cent, but the real unemployment level must be much higher. This is because the education level of the man-power from Wonogiri is low. The education level of the man-power is low because almost 40 per cent of the population has only completed elementary school (BPS Wonogiri 2005).

Rejosari village located at Jatisrono sub-district, Wonogiri District, Central Java Province is an agricultural area surrounded by people's forests and hilly areas. In 2004, the population in the village was 1,075 head of families or 4,627 people consisting of 2,298 (49.67 per cent) women and 2,329 (50.33 per cent) men. Almost 60 per cent of the population is engaged in agriculture as farmers or farm workers.

The community of the Rejosari village is an agricultural community dominated by rural traditional life. Although in general the society's norm is patriarchal, in daily life the community has been practicing close cooperation between men (husband) and women (wife) at the family level since a long time ago.

It is acknowledged by the women's group (majority at the age of 30–40 years old) that the role of women in the traditional family is parenting children, helping in all domestic jobs and assisting agricultural jobs in the paddy field. Women born in 1950–1960 admit that they marry their husband from the same village/district and get married at around 17 years old. The women's constraint in general is the limitation of education and mobility. This situation prevents women from becoming independent in many ways psychologically as well as economically. This is proven by the fact that women from this village feel afraid of going alone to the outer cities. This means the accessibility of women to the economic activities; financial credit and training opportunities are limited. However, most women are aware that there is a big change right now shown by the increase of women's roles in all aspects in their vil-

lage. Some of the young generations of women have started to go to the outer cities/regions for selling food (meat balls, rice and soup) and traditional herbs.

The division of roles in their daily family activities has been implemented respectively both in economic and domestic activities. The community of Rejosari village has been getting used to implement the **gender distribution of roles starting from the family level and continuing to the community level**, even though it is still at the traditional stage. The value of the division of gender roles has been practiced in their daily family management activities starting from collaboration between husband and wife in their domestic activities to the economics and community social activities. The values of gender equality and justice have also been implemented in formal education. Boys and girls are not discriminated against for entry into school from Primary to Junior High Schools. The community realizes that the value of boys and girls are the same, even though the community acknowledges that boys can be leaders for the family as is the root custom of Javanese culture and the majority of Moslem societies who have been practicing a patriarchal system.

The villagers consider the importance of family values in every aspect of human life. They realize that a human will not have a quality of life without family. If somebody has a problem, he/she will ask for help to his/her family. Somebody who is successful in the city, at the end he/she will return to his/her place of origin and finally to his/her large family. Thus, the values of "my family is my world" and "back to my family" are basic values of family life in Rejosari village.

The community of Jatisrono sub-district in general, and the community of Rejosari village in particular, have been popularly seen as tough and hard-working people, people who cooperate readily, love peace and maintain a sustainable environment. The existence of good work ethics of the community has been provided by the good organizational structure of village government, good village administration, active village cooperative, good facilities of infrastructure, bridges, and the village office. Most of the community infrastructures were built by local enterprise using the community's own finance. The people in the village, both men and women, young and old, were reported on participating in the construction of the village road in 1997. This activity is viewed as the community's close cooperation both in social and economic activities, with involving men and women. These activities make Rejosari Village one of the role models of community empowerment that involves gender equality and equity.

4.2 The Gender Division of Labor in Agroforestry Activities

The results of the survey showed that in general the partnership has existed in good condition in the activity of the cashew nut business, even though it is not balanced yet and perfect (Figure 1 & Figure 2). There is an unequal gender role in the accessibility and control as a collector trader and wholesale trader, whereas the roles of men are dominant over women as collectors, wholesale

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traders, access to credit and information, and marketing. However, the roles of women in the processing of cashew nuts and the use of machinery for processing are relatively higher than that of men.

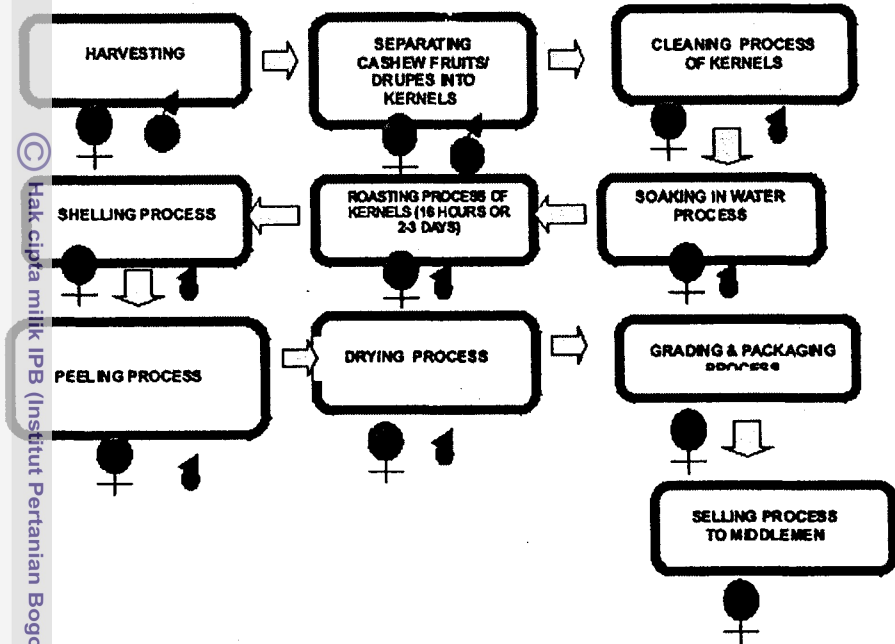


Fig. 1. Gender roles in the processing of Cashew nuts

In general, it was also found a good partnership existed between men and women in the accessibility of control towards resources and processing technology. The role of women is limited in the accessibility of information on pricing and training. Even the access of women to credit for the production and marketing does not yet exist in Rejosari village, Wonogiri District. On the other hand, the role of women is greatest in the overall manufacturing process.

The role of gender in the household activity is a good practice and almost equal between men and women. The role of gender in the activities of financial economics of the cashew nut business is presented in Table 1.

Based on the survey, it has been recognized that in general the role of men is more dominant than that of women in financial economic activity and the cashew nut business. On the financial activity of the cashew nut business, both men and women participate actively whether it is alone or altogether to budget for family expenses, to plan family finances, to manage family finances

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No	Activity	Female		Male	
		Accessibility	Control	Accessibility	Control
1	Classification of Cashew Nut Farmer				
a	Farmer				
b	Processor				
c	Collector Trading	-	-		
d	Wholesale Trading	-	-		
2	Resources				
a	Land				
b	Credit for Production	-	-		
c	Credit for Marketing	-	-		
d	Information on Price				
e	Information of Training				
3	Processing Technology				
a	The use of Pengacip machinery				
b	Practice of Processing				
4	Marketing				
a	Organization of Marketing	-	-		
b	Marketing Channels	-	-		
c	Market Extension	-	-		

: Indicates a low level of women/men role
 : Indicates a high level of women/men role

Fig. 2. Gender analysis of the Cashew nut business in Rejosari village, Wonogiri district.

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Table 1. Distribution of Respondents Based on the Role of Gender in the Activities of Family Economics and Cashew Nut Business (n=28).

No	Category	Wife		Husband and Wife		Husband		Total	
		n	%	n	%	n	%	n	%
FINANCE OF CASHEW NUT BUSINESS AND FAMILY									
1.	Decision of spending of family money	21	75.0	7	25.0	0	0.0	28	100
2.	Management of family money	18	64.3	9	32.1	1	3.6	28	100
3.	Planning of family finances	12	42.9	15	53.6	1	3.6	28	100
4.	Management of cashew nut money	17	60.7	10	35.7	1	3.6	28	100
5.	Planning of finance cashew nut business	12	42.9	12	42.9	4	14.2	28	100
6.	Borrowing/credit money for business	5	23.8	11	39.3	5	23.8	21	100
7.	Borrowing money for family needs	10	40.0	11	44.0	4	16.0	25	100
8.	Finding alternative solutions for financial problems	4	14.3	21	75.0	3	10.7	28	100
ACTIVITIES OF CASHEW NUT AND ECONOMIC BUSINESS									
9.	Activity of maintenance of cashew nut tree	6	28.6	4	19.0	11	52.4	21	100
10.	Activity of fertilizing cashew nut tree	7	33.3	2	9.5	12	57.1	21	100
11.	Activity of harvesting cashew nut tree	8	38.1	7	33.3	6	28.6	21	100
12.	Activity of drying cashew nut	8	34.8	13	56.5	2	8.7	23	100
13.	Activity of processing cashew nut	9	39.1	13	56.5	1	4.3	23	100
14.	Activity of selling cashew nut	23	85.2	1	3.7	3	11.1	27	100
15.	Receiving of payment from selling cashew nut	25	89.3	0	0.0	3	10.7	28	100
16.	Responsibility of public work/economics	2	7.1	16	57.1	10	35.7	28	100

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for the cashew nut business, to borrow money for family needs, and to apply for a credit for their business. For the activity of the cashew nut business, both women and men participate actively whether it is alone or together in the activities of maintenance of cashew nut trees, fertilizing, harvesting, drying and processing. Women are dominant in selling the cashew nut and receiving the money, whereas men are responsible for public/economic activities. Below is a presentation of the proposal of marketing strategy of the cashew nut business (Table 2).

Table 2 Distribution of Respondents Based on the Proposal of Marketing Strategy for the Cashew Nut.

No	Strategy	Wife		Husband and Wife		Husband		Total	
		n	%	n	%	n	%	n	%
FAMILY GENERATING INCOME									
1.	Raising finance by pawning goods to plant cashew	2	33.3	3	50.0	1	16.7	6	100
2.	Searching for credit to plant cashew nut	2	28.6	4	57.1	1	14.3	7	100
3.	Increase working hours to plant cashew nut	3	14.3	13	61.9	5	23.8	21	100
4.	Asking assistance from children to plant cashew nut	6	42.9	7	50.0	1	7.1	14	100
5.	Selling assets to plant cashew nut	0	0.0	1	100	0	0.0	1	100
CUTTING BACK EXPENSES									
6.	Reducing other costs to plant cashew nut	2	20.0	7	70.0	1	10.0	10	100
7.	Reduce the cost of transportation by walking/riding bicycle or jajan with friends	1	25.0	2	50.0	1	25.0	4	100
8.	Withdraw savings to plant cashew nut	1	20.0	4	80.0	0	0.0	5	100
LOAN OR DEBT									
9.	Borrowing/Owing from family/neighbor to plant cashew nut	1	14.3	6	85.7	0	0.0	7	100
SEARCHING INFORMATION									
10.	Searching for information about planting and processing cashew nut	0	0.0	4	30.8	9	69.2	13	100

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The result of the survey consistently shows that the role of women is more dominant than that of men in the finance and economic activity in the cashew nut business and the cashew nut marketing strategy. It also recognized that both men and women are participating actively whether it is alone or together for implementing income generation strategies such as pawning assets to cultivate cashew nut, seeking of credit for cashew nut business, increase working hours to cultivate cashew nut trees, asking children to cultivate cashew nut trees, and selling assets to cultivate cashew nut trees. It was found that both men and women are participating actively whether it is alone or together for implementing cutting back strategies such as the reduction of cost of cultivation of cashew nut trees, reduce the transportation costs by cycling, walking obtaining lift, and withdrawing savings to cultivate cashew nut trees. The role of information gathering and the forming of strategies to cultivate cashew nut trees is dominated by men.

Conclusions and recommendations

In conclusion, it is found that there was an imbalance of gender partnership in the division of labor applied at cultivation, processing and marketing of cashew nuts between men and women. This unequal gender role also existed in the accessibility and control with collector traders in the collection and wholesaling processes. However, an equal gender role already existed in accessibility and control of farming activities, while in the processing the role of women was the more dominant. It is also found that the unequal gender partnership at the community level was caused by socio-cultural constraints.

Based on the above findings the following recommendations are made. Firstly, agreements among communities in the villages should be used to reformulate regional planning of agroforestry so that it involves both women and men. Secondly, female empowerment strategies should be focused on the potential of their processing skills with expansion into higher processing skills e.g. the processing of broken nuts into nut-sandwich (chips) and cashew nut chocolate. Thirdly, farmer groups should be empowered by increasing the quality of women's skills and knowledge, especially in the area of marketing and processing of local commodities. Finally, it is proposed that there is a need for capacity building by regional government aimed at strengthening gender empowerment in agroforestry programs.

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ENVIRONMENTAL SCIENCE AND ENGINEERING

Teja Tscharntke · Christoph Leuschner · Edzo Veldkamp · Heiko Faust · Edi Guhardja · Arifuddin Bidin (Eds.)

Tropical Rainforests and Agroforests under Global Change – Ecological and Socio-economic Valuations

Tropical rainforests are disappearing due to agricultural intensification and climate change, causing irreversible losses in biodiversity and associated ecosystem functioning. Ecosystem properties and human well-being are profoundly influenced by environmental change, which is often not considered during land use intensification. Understanding these processes needs an integrated scientific approach linking ecological, economic and social perspectives at different scales, from the household and village level to landscapes and regions. The chapters in this book cover a broad range of topical research areas, from sustainable agroforestry management, climate change effects on rainforests and agroforests to integrated concepts of land use in tropical landscapes.

Teja Tscharntke holds a professorship in agroecology at the University of Göttingen (Germany) and is editor of the journal *Biodiversity and Applied Ecology*. His main fields of competence are multitrophic plant-insect interactions, ecosystem services and biodiversity research at local and landscape scales.

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