

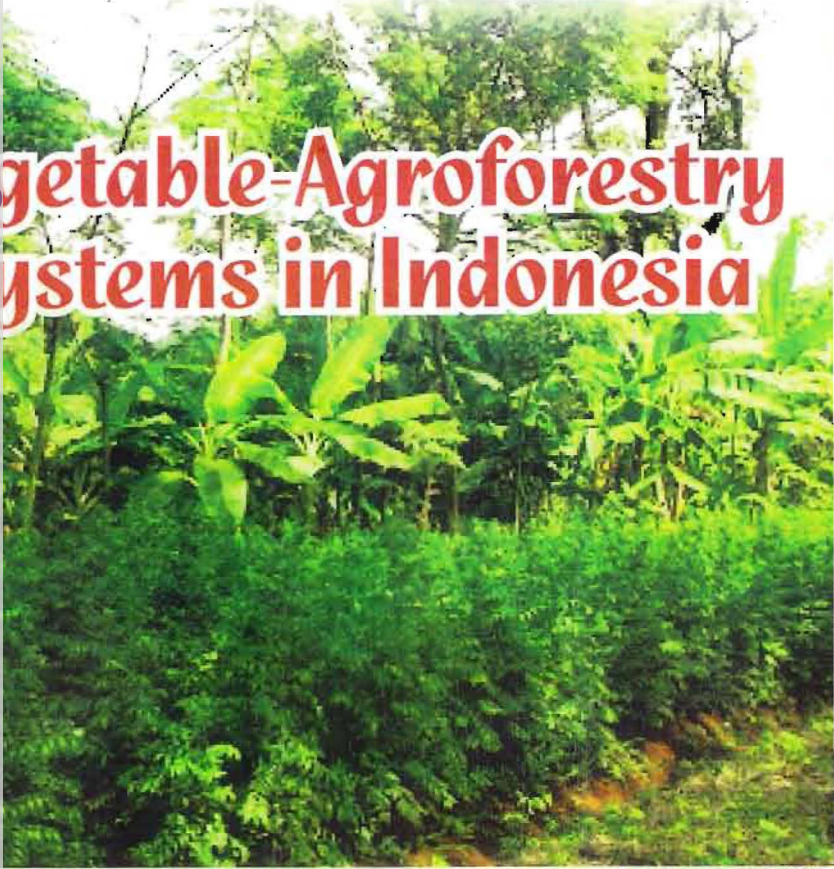


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# Vegetable-Agroforestry Systems in Indonesia



Bogor Agricultural University



Editors

Tri Koesoemaningtyas, Bambang S. Purwoko, James M. Roshetko, Manuel C. Palada, Juang G. Kartika, Lia Dahlia, Kusuma Wijaya, Arif Rahmanulloh, Mahmud Raimadono, Herien Puspitawati, Tisna Prasetyo, Suseno Budidarsono, Iwan Kumiawan, Manuel Reyes, Wanraya Suthumchai, Karika Kunta and Samran Sombatpanit



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# Vegetable-Agroforestry Systems in Indonesia



Bogor Agricultural University

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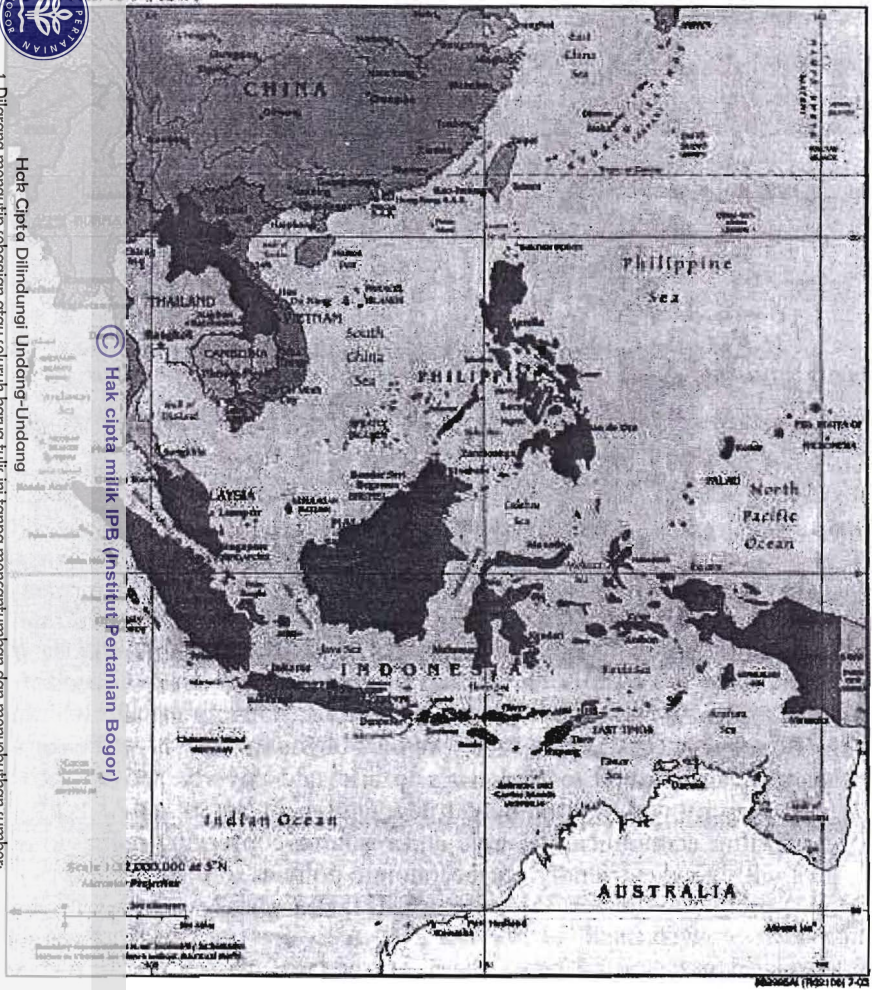


# Southeast Asia

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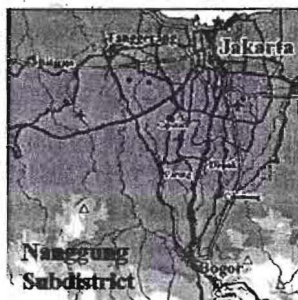
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A typical scene of the village landscape at Nanggung Subdistrict of Bogor District in West Java Province of Indonesia where the research team studied to find ways to alleviate poverty and reduce food scarcity and environmental degradation in Southeast Asia by combining economically viable and resource-conserving technologies with gender-friendly socioeconomic policies to integrate vegetable production in agroforests on small farms

*Location of the Research Area—Nanggung Subdistrict of Bogor*





# Vegetable-Agroforestry Systems in Indonesia

## Editors

Anas D. Susila, Bambang S. Purwoko, James M. Roshetko, Manuel C. Palada, Juang G. Kartika, Lia Dahlia, Kusuma Wijaya, Arif Rahmanulloh, Mahmud Raimadoya, Tri Koesoemaningtyas, Herien Puspitawati, Tisna Prasetyo, Suseno Budidarsono, Iwan Kurniawan, Manuel Reyes, Wanraya Suthumchai, Karika Kunta and Samran Sombatpanit

Published as **WASWAC Special Publication No. 6c** by

The World Association of Soil and Water Conservation (WASWAC)

www.waswac.org, www.waswc.org, http://waswac.soil.gd.cn, www.irtces.org

In cooperation with the World Agroforestry Center (ICRAF), www.icraf.org

ISBN: 978-974-350-655-0

This book was made possible through support provided by the United States Agency for International Development (USAID) and the generous support of the American people for the Sustainable Agriculture and Natural Resources Management Collaborative Research Support Program (SANREM CRSP) under terms of Cooperative Agreement Award No. EPP-A-00-04-00013-00 to the Office of International Research and Development (OIREED) at Virginia Polytechnic Institute and State University (Virginia Tech); and terms of sub-agreement 19070A-25632 between Virginia Tech and North Carolina Agricultural and Technical State University (NCA&T).

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**Suggested citation:** Susila, A.D., B.S. Purwoko, J.M. Roshetko, M.C. Palada, J.G. Kartika, L. Dahlia, K. Wijaya, A. Rahmanulloh, M. Raimadoya, T. Koesoemaningtyas, H. Puspitawati, T. Prasetyo, S. Budidarsono, I. Kurniawan, M. Reyes, W. Suthumchai, K. Kunta and S. Sombatpanit (eds). 2012. *Vegetable-Agroforestry Systems in Indonesia*, Special Publication No. 6c, World Association of Soil and Water Conservation (WASWAC), Bangkok, Thailand and the World Agroforestry Center (ICRAF), Nairobi, Kenya, ISBN: 978-974-350-655-0, 362 pp.

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**Printed at:** FUNNY PUBLISHING, 549/1-2 Soi Phaholyothin 32, Phaholyothin Rd. Chatuchak District, Bangkok 10900, Thailand. Phone: +66-(0)25793352; Fax: +66-(0)25611933; funnyint@yahoo.com, funnyint@truemail.co.th

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## Foreword

At the time of writing, our planet's population is around 7.09 billion and is expected to increase 101 million people per year. About 926 million people are hungry, of whom 98% live in developing countries with Asia and the Pacific at 578 million. Every day, our available resources—arable land, clean water, fresh air—are diminishing and this is likely to accelerate as climate changes increase.

If we are to feed, clothe and house ourselves while sustaining our environment and also reach the Millennium Development Goal of halving the number of people living in poverty by 2015, we need to find new ways of making the most of what we have without destroying more of our present and most of our future.

The Sustainable Agriculture and Natural Resources Management Collaborative Research Support Program (SANREM-CRSP) project on 'Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds' has been a key player in addressing these concerns.

North Carolina Agricultural and Technical State University, the project's lead organization, has brought together a team of 28 scientists from several prestigious US and Southeast Asian universities, including the Institut Pertanian Bogor, and the World Agroforestry Centre (ICRAF), World Vegetable Centre (AVRDC) and MARS Incorporated.

The project team set out to find ways to alleviate poverty and reduce food scarcity and environmental degradation in Southeast Asia by combining economically viable and resource-conserving technologies with gender-friendly socioeconomic policies to integrate vegetable production in agroforests on small farms. The result has been that poor farmers have been able to improve their incomes sustainably and protect environmental services, including the biodiversity and water quality, of the watersheds in which they live.

In Indonesia, the Bogor Agricultural University (Institut Pertanian Bogor) and the World Agroforestry Centre's Indonesia program worked together with farmers in Nanggung, who are representative of their peers in many parts of Indonesia. Primarily smallholders living on or below the poverty line with access to less than 1 hectare of land, their traditional systems, while environmentally sustainable, were not purposely managed and did not fully meet their needs. Because their lands were under-productive, many local communities were forced to utilise the neighbouring Gunung Halimun National Park, a major watershed for Jakarta.

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Now, through intensifying vegetable production on the farmers' plots, without clearing any new land, benefits are flowing not only to the farmer families of Nanggung but downstream as well, in the form of improved water quality. This was achieved through the project team developing a system of technical assistance and innovation that empowers farmers to seize market opportunities by enhancing and diversifying the productivity and profitability of their gardens while maintaining the sustainability of their traditional systems.

This book gives details about the process and we are both proud to have been involved in its publication. We anticipate that the lessons learned from the project work in Indonesia will be of value not only throughout the archipelago but also on the mainland, moving us closer to our goal of a sustainable, wealthier and healthier Southeast Asia.

Dr Ujjwal Pradhan  
Regional coordinator  
World Agroforestry Centre (ICRAF)  
Southeast Asia Program

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# Women Access to Market: Vegetable Marketing of Women in the Village of Hambaro, Nanggung Subdistrict, West Java, Indonesia

Herien Puspitawati<sup>1</sup> and Tri Koesoemaningtyas<sup>2</sup>

## Abstract

This study aims to compare how gendered networks and coalitions affect the ability of groups to access and control natural resources and to access appropriate markets and capture value for their agricultural products. The study showed that men produce and sell main agricultural products such as rice, corn or cassava, while women may produce and sell minor vegetables. Most agricultural products are used for consumption and the surplus is sold around the village or to the middlemen. Commercial production by women farmer started with jasmine flowers and later with guava. In the village of Hambaro, market access is open to everyone, but dominated by men. Only a small number of women in Hambaro use the access to market their products. All nodes in the marketing network of vegetables and fruit especially guava are dominated by men. The middlemen provide information on demand and price of products. Men and women obtain the same price when they use the same network. Men get higher prices only when they go directly to the main market. Most women do not negotiate for price, but only on the terms of payment. Although men dominate the market for vegetables and fruits, the allocation of expenditures from the sale of vegetables and fruits are similar to that of women. The source of power of men is from the long established network between men and the middlemen, in addition to institutionalized farmer groups and their access to capital. The source of power of women is mainly from family networking and support. Women who are actively participating in marketing gain support from their husbands in production and marketing of vegetables and are more confident in negotiating obstacles in marketing. Katuk selling directly to consumers through retails and obtaining higher prices than from middlemen.

**Keywords:** Gender analysis, marketing network, vegetable agroforestry

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## Background

The Vegetable Agroforestry (VAF) System developed through the SANREM Project in Indonesia is expected to alleviate poverty, food scarcity and reduce environmental degradation in Indonesian watersheds. The project on vegetable agroforestry in Indonesia is located at the Kecamatan Nanggung, a sub-district located in the western part of the West Java Province. Nanggung is considered as one of the less developed areas in the Bogor Regency with the highest number of poor households. The main productive activity in Nanggung is agriculture, mainly rice, although most households' income comes from non-agricultural activities.

The Vegetable Agroforestry (VAF) system is the type of agriculture system being introduced to the Nanggung Subdistrict by the SANREM Project. This system is believed to be able to increase income of farmers through the introduction of high-value vegetable crops, improve farmers' livelihoods and at the same time, reduce the risk of further degradation of watershed areas and maintain sustainable agriculture. Underlying SANREM's approach is the assumption that market access will enhance livelihoods and play a significant and positive role in sustainable agriculture and natural resource management.

Access to both natural resources and markets is gendered, and gender mediates the distribution of benefits between individuals and within households in given communities. The socioeconomic study showed that women of Nanggung have been participants in agriculture production; however, most women were involved in rice production and only a small number (12.1%) in dryland agriculture. The lack of women's active participation in vegetable production was mainly due to the lack of access to production inputs and credits. The baseline data showed that only 12.9% of women had access to credit and very few women (3.3%) had access to production inputs and technology. Although still dominated by men, a fair number of women had access to (12.6%) and control (12.6%) over marketing of agricultural products and 12.9% of women had access to price information.

This study is aimed at understanding how the gendered nature of networks linking women to markets impact the quality of information they receive and their bargaining power.

## 2. Methodology

**1. Focus groups discussion** with women farmers to identify formal and informal markets for products, as well as source of products.

**2. In depth interviews** with women who actively marketed their products as well as representatives of different sectors/groups identified in the market.

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3. **Surveys at markets and households** in local communities to assess differences in current market prices commanded by members within a group.

4. **Map gendered spaces of production and gendered spaces in the market** to identify links between two physical spaces (harvest and sale).

5. **Identification and characterization of networks, coalitions, or associations** facilitating access to market. Describe their origin.

### 3. Findings

#### 3.1 Characteristics of respondents

The respondents were part of the group of women in the Bhakti Tani Women Farmer Group. Their average age was 39.3 years, with the youngest being 26 years old and the oldest being 60 years old. The average age of the husbands was 46.9 years, with the youngest being 26 and the oldest being 70 years old. The women were in the productive age group. One woman was the head of the household (widow). The average amount of education of the women was 7.1 years and only two were high school graduates. The average education of the husband was similar.

The average household size of the respondents was 6 which was classified as a medium size household. The occupations of the household head were farmer (33.3%), owner of small business (22.2%), trader (11.5%), laborer (11.1%), employee (11.1%). The average household income was Rp1,592,280/month of which 61.7% was contributed by the husband and 38.3% by the wife.

Most respondents were members of the women farmer group and had been members of the newly formed savings and loan group since 2008. Two respondents had recently joined the savings and loan group in 2009. Most respondents have had training in vegetable production from the SANREM project.

#### 3.2 Experience in vegetable production and marketing

Rice is the major crop in Nanggung and rice production involved both men and women. Vegetable production was done as a supplementary farming activity. Most agricultural products were used for consumption purposes and the surplus sold around the village or to the middlemen. However, the case was different for guava which was planted by Hambaro farmers solely for commercial purposes, with the product sold in the market. During the peak season, the main buyers from the big cities of Jakarta, Surabaya and Bandung came to Hambaro. During the regular season, the farmers sold the product to the middlemen.

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Women in Hambaro were not customarily involved in the marketing of produce. Based on our baseline study, marketing of produce was generally done by men. The respondents, women who belonged to the Women Farmer Group Bakti Wanita Tani, were the few who were involved with marketing produce. These women were first involved in marketing when they were introduced to planting jasmine 16 years ago. The women mostly planted jasmine in their garden and sold directly to the buyers who came from the capital, Jakarta. This practice was no longer sustained because the buyer did not increase the prices for the past 10 years.

The women respondents had different reasons for their direct involvement in vegetable production and marketing. The reasons included economic reasons such as to supplement the family income, to have a ready supply of fruits and vegetables for the children, follow neighbors or perhaps they had underutilized land. Factors affecting women's choice of crops grown, can be summarized as follows:

- Family economic needs, and the women felt capable
- Women had spare time to be allocated for productive activities close to home (home garden/*pekarangan*)
- They were introduced to the cash crop of jasmine and guava by relatives from the big city
- The leader of the women farmer group was the local extension person who attended meetings with other local extension and government extension workers in the district
- Government or NGO introduced new crops to the farmers.

The types of vegetables and fruits produced and sold by women in the group included yard-long bean, bean, cucumber, gnomon, corn, tomato, bamboo shoot, mustard leaves, cassava leaves, and recently, katuk (Table 1). When the harvest was small the vegetables were sold in bunches/bundles directly to consumers or to neighborhood stores (*warung*). When the harvest was large the women sold their vegetables to the middlemen (*tengkulak*).

#### 4. Women's Market Network

Access to market for agricultural products was open to both men and women in the village of Hambaro, the access was open to everyone. The market for vegetables in Hambaro consisted both of formal and informal markets. The informal markets for vegetables sold by women were the neighborhood stores (*warung*) or the neighbor directly. The closest formal market for the women was located in the other subdistrict (Luwiliang).



Types of vegetables and fruits marketed by women

| Type of Vegetables/fruits | No. of respondents | Price                                    |
|---------------------------|--------------------|--|
| bean                      | 1                  | Rp1,250/kg                               |
| chili pepper              | 2                  | Rp5,000/kg                               |
| tomon                     | 1                  | Rp10,000/kg                              |
| ...                       | 1                  | Rp8,000/kg                               |
| ...                       | 4                  | Rp1,000-2,000/kg                         |
| ... bean                  | 3                  | Rp1,200-2,000/kg                         |
| ...                       | 6                  | Rp1,200/kg<br>Rp500/bundle (5 bundle/kg) |
| ... mon see               | 2                  | Rp15,000/kg                              |
| ... aya                   | 1                  | Rp1,000/kg                               |
| ... stard lea             | 1                  | Rp1,250/kg                               |
| ... assava lea            | 1                  |  |
| ... umber                 | 3                  | Rp1,000/bag                              |
| ... mato                  | 1                  |  |
| ... weet potat            | 1                  | Rp1,000/kg                               |

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Table 2. Men and women's spaces (physical areas) in the production

| No. | Description             | Men   | Women   |
|-----|-------------------------|---|---|
|     | <b>Production</b>       |   |   |
|     | Roles                   | Planting, harvesting                                | Planting, maintenance and harvesting              |
|     | Scope of physical areas | Village   | Hamlet  |
| 2   | <b>Processing</b>       |   |   |
|     | Roles                   | No processing                                       | No processing                                     |
|     | Scope of physical areas |   |   |
| 3   | <b>Marketing</b>        |   |   |
|     | Roles                   | Marketing agricultural produce to the formal market | Selling vegetables to neighbors and formal market |
|     | Scope of physical areas | Very large, to formal market and even out of town   | Limited mostly informal market among neighbors    |

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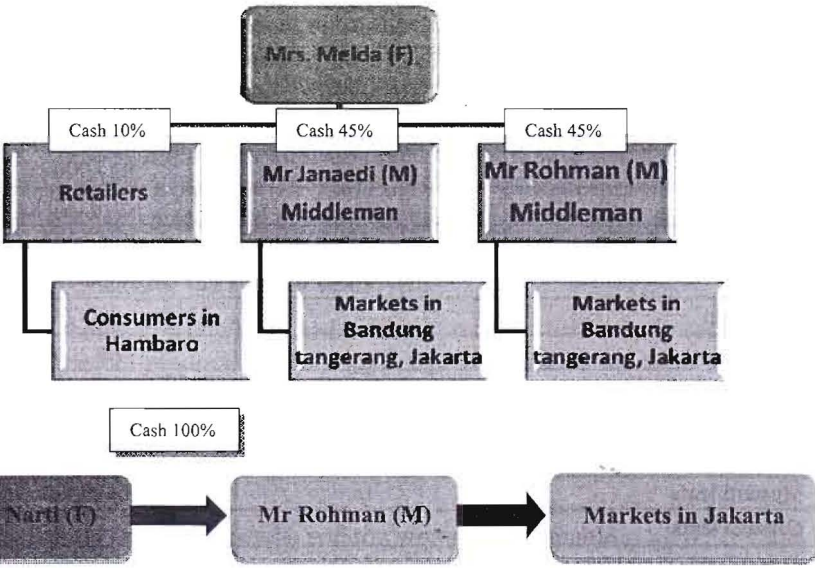


Figure 1. Market network of two women respondents in Hambaro for guava

The middlemen were the only network that linked the women in Hambaro with the formal market. Only a small number of women in Hambaro took advantage of the open access to middlemen to market their products. Our respondents belonged to this group. These women had access to capital (in this case through saving and loans) and were highly motivated to develop the network with middlemen or with retailers.

Most niches in the market were under the control of men. The network that the women used to sell vegetables and guava were male dominated. In the closest major market in Leuwiliang only a small number of women occupied niches in the market, mostly selling herbs. Men controlled most of the niches in the market, and most acted as wholesalers for buyers from Jakarta or other big cities. Women only sold as small retailers or sold vegetables in the neighborhood stores (warung). All nodes in the marketing network of vegetables and fruit especially guava were dominated by men (Fig. 1).

Most agricultural products were used for consumption and the surplus was sold around the village or to the middlemen. However, the case was different for guava, which farmers in Hambaro planted solely for commercial purposes. During the peak season, the main buyers (pelanggan/langganan) from the big cities of Jakarta, Surabaya and Bandung came to Hambaro to buy the product, and during the regular season, the farmers sold the produce to the middlemen.

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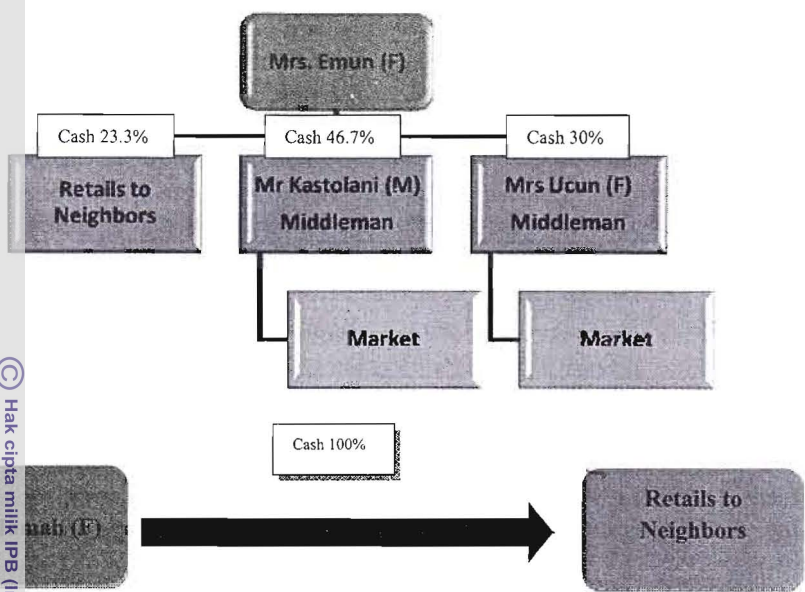


Figure 2. Market network of two women respondents in Hambaro for katuk

In most cases, when the marketing of vegetables involved middlemen, then the price was decided by the middleman who came from within or outside the village, and who acted as information source for product price and demand. Women and men obtained the same price when they sold the same product to the same middleman, as in the case of guava. Men may get higher prices because they can go directly to the market but when men used the same network as women, they obtained the same price as women.

Most women did not negotiate the obstacles to market, especially in guava. Most women who sold guava did not negotiate for price, and instead received the price set by the middlemen who were mostly men. Women negotiated only on terms of payment. In the case of katuk, the women's group faced the problem of price negotiation with the middlemen because of the limited sale of production. The women negotiated this obstacle by choosing to sell the vegetable directly to the consumers through retails from which they obtained a higher price than offered by the middlemen (Fig. 2).

The ability to penetrate the market was determined by many factors. Customarily, social class interacted with gender in determining the bargaining power and penetration of the market by agricultural products. The economic factor was the main factor affecting a person's ability to penetrate the marketing system. With capital and land, a person can directly sell or buy agricultural products. In the studied group, the women were able to sell their agricultural products to the middlemen or directly acted as retailers to sell their products (vegetables and guava) to local consumers or neighbors.

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The source of men's power was the network between men and the mid-women that had been established for a long time. In addition men had institutionalized farmer groups for many years and had access to capital. The source of power of women was mainly from family networking and support, specifically for the marketing of guava and katuk. The other source of power was from the newly formed networking connections by the local women. However, this source of power was still very weak and needed attention from the local leaders to improve and sustain the coalition and network.

The coalition and network developed naturally without intervention. The coalition/network arose when the women felt the need to develop it out of economic necessity. The coalition became more permanent and sustained when these women were organized into formal institutions, in this instance a women farmers' group called 'Bhakti Wanita Tani' (The Dedication of Women Farmers). The women in this group gained the support of the men in their families in being actively involved in vegetable production and marketing. The cooperation between men and women in agricultural production will increase the benefit for generating income for the family. For example, the husbands of the women who planted katuk helped in land preparation and one husband helped in marketing katuk.

## 5. Benefits from Vegetable Production and Marketing

The income generated from vegetable production and marketing activities was utilized for family expenditures such as consumption, children school fees, utilities and additional capital for farming. Although men dominated the market for vegetables and fruits, the allocation of expenditures from the sale of vegetables and fruits was similar to that of women since the men were labeled as main breadwinners, and the women as secondary breadwinners.

The women also had additional benefits from their activities in farming and marketing vegetables in terms of their ability to save money, diversify their commodities and have new source of capital. The women are also now known for their farming sources. One woman was known as 'Mumun the katuk seller' after she marketed her own katuk. This group of women gained confidence from the experience to try new crops and was responsive to the introduction of katuk production.

However, many of the women felt that they still had not gained any benefit for themselves, since they ultimately considered their families their first priority. Involvement in marketing vegetables gave the women more opportunities to be part of the decision-making in the family regarding farming (type of crop to plant, inputs and marketing).



Figure 3. Family finance training for women



Figure 4. A local market in Bogor City

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## Conclusions

1. Commercial production by women farmers started with jasmine flowers and later with guava and katuk.
2. Most women in Hambaro market their products through the middlemen.
3. All nodes in the marketing network of vegetables and fruit especially guava were dominated by men.
4. Men and women obtained the same price when they used the same network.
5. Most women did not negotiate for price but only on the terms of payment.
6. Women who actively participated in marketing were more confident in negotiating obstacles in marketing by selling directly to consumers through retailers and obtained higher price than from middlemen as in the case of katuk.

## 7. Acknowledgments

This publication was made possible through support provided by the United States Agency for International Development and the generous support of the American People (USAID) for the Sustainable Agriculture and Natural Resources Management Collaborative Research Support Program (SANREM CRISP) under terms of Cooperative Agreement Award No. EPP-A-00-04-00003-00 to the Office of International Research and Development (OIREDD) at Virginia Polytechnic Institute and State University (Virginia Tech). This publication was also contributed by Dr. Maria Elisa Christie and Dr Keith Moore (Office of International Research, Education, and Development (OIREDD)-Virginia Polytechnic Institute and State University, USA).





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