



Smallholder Vegetable Cultivation: Challenges in Sustaining Commercial Production and Market Links

James M. Roshetko, Iwan Kurniawan and Suseno Budidarsono

Background

This poster reports on how smallholder farmers can establish commercially oriented systems and maintain market links. Smallholder vegetable producers in Nanggung sub-district face some major uncertainties which impose difficult planning horizons. Product prices often vary day to day, seasonally and year to year; yields vary from season to season; planting and harvesting times may vary considerably due to inconsistent weather patterns. Price uncertainty is a result of the biological lag time between planning, production, harvest and sale. In many cases, vegetables are ready to harvest but the crop does not meet market specifications or insects and disease cause significant damage and loss of marketability. The World Agroforestry Centre and Winrock International conducted action research in Nanggung sub-district, Bogor district, West Java, to reach motivated and innovative farmers who were committed to improving their incomes by increasing the production and market access of their agroforestry products, specifically commodities produced in vegetable agroforestry systems (VAFs). Activities were conducted as part of the Agroforestry and Sustainable Vegetable Production in Southeast Asian Watersheds project supported by the USAID-funded Sustainable Agriculture and Natural Resource Management Collaborative Research Support Program (SANREM-CRSP.)



Objectives



Market Chain Identification



Daily demand for *katuk* from Ciampea farmers alone exceeds 15 t. At a farm gate price of Rp 1800 per kg, daily transactions of *katuk* from Ciampea are Rp 27 000 000 per day (USD 2,935 per day).

Materials & Methods

Site. The research sites were located in Parakan Muncang, Hambaro and Sukaluyu villages, Nanggung sub-district. Nanggung is a rural area with reasonable access to the urban markets of Bogor city (1 hour drive) and Jakarta (2-3 hours).

Household Study. A household study was conducted to identify how farmers' socio-economic characteristics influence their ability to produce vegetables, the type of vegetable production systems preferred, and the economic productivity of those systems. The study was implemented in June and July 2006.

Market Research. Market data and information were collected using an iterative and interactive Rapid Market Appraisal (RMA) methodology. Unlike formal subsector analysis, RMA provides a quick, flexible and effective way of collecting, processing and analyzing information and data about markets and marketing systems. The RMA activities conducted included market chain identification, focal group discussions with farmers and traders, market potential survey, and consumer preference survey.

Results

Household Study. The study of 185 households showed that land is unevenly distributed: 52.4% of households have access to less than 0.2 ha. Over 57% of agricultural land is rice fields (irrigated or rain-fed); 23% is upland systems; and 20% is tree gardens. Only 27% of respondents have experience in producing and marketing vegetables, which are produced in upland or tree gardens. Over 70% of rice production is for family consumption; 90-100% of vegetable production (with the exception of corn) is sold.



Focal Group Discussions (FGD)

An FGD was conducted with 35 farmers and five local traders. The key points discussed were what limits the current vegetable production and marketing systems and where is there potential to expand. Farmers' main constraints are limited landholdings and small-scale production. The quantities and quality of vegetables produced are low and irregular. Farmers have little market information and do not produce vegetables based on existing market demand. Additionally, farmers have limited access to technical assistance or credit to improve vegetable production and traders have limited knowledge and facilities for storage. These conditions make it difficult for local traders to establish permanent links with traders further up the market chain.

Market Potential and Consumer Preference Surveys

Following the FGD, a market potential survey was conducted using a semi-structured questionnaire to identify candidate species for smallholder production. Analysis of the survey data indicated that *Katuk (Sauropus androgynus (L.) Merrill)* and *kucai (Allium odorum)* held greater potential. Both species are familiar to farmers and known to be suitable for the biophysical conditions in Nanggung. Products can be harvested 3 to 4 months after establishment and every 45 days thereafter until plants are 5 to 7 years-old. Additionally, market prospects and pricing are good for both species in the lucrative Jakarta and Tangerang markets.

Marketing challenges and opportunities

Most smallholder farmers are satisfied to wait for their innovative neighbors to take the lead and assume the risks. Like their peers in many locations, smallholders in Nanggung face many constraints in producing and marketing crops. Most survive at or below the poverty line, with little ready cash and no access to credit. Little labor or agricultural inputs are committed to vegetable production. Yet a number of Nanggung smallholder farmers were able to adopt the market-oriented production of *katuk* and *kucai*. What made this possible?

- Profitable production of *katuk* and *kucai*.
- High and stable demand in local, regional and national markets.
- There was strong facilitation from the World Agroforestry Centre and Winrock. Supportive market and technical links were developed.
- Local traders committed to buying the *katuk* and *kucai* produced at an agreed price.
- Traders' commitment was made possible, because the Centre and Winrock enhanced their awareness of *katuk* and *kucai* demand and markets. Strong technical support was also provided.

Amount

52%	Live below poverty line
59.4%	Agriculture as main occupation
20.5%	Trader/merchant as main occupation
5.2	Ave hr/dy spent on agriculture activities
14%	Household income from agriculture
42%	Household income from trade
0.42	Average landholding ha/household