

References on participatory testing and evaluation of agroforestry practices March 2000

Compiled by Steven Franzel, ICRAF, P.O. Box 30677, Nairobi. My comments are in italics. Let me know if you know of other works that should be included in this list. Copies of ICRAF articles and chapters are available from myself or Mercy Mwangi (m.mwangi@cgiar.org). Books need to be ordered from the publisher. Publications from CIMMYT, CIAT, or other organizations need to be ordered directly from them; addresses are given below. If possible, provide your email address with your request so that we can send you the papers by email. * indicates that the paper is new or has been updated since the last issue of this reference list in July, 1999.

1. General references

Coe, Richard (compiler) 1999. Checklist for protocols for experiments with farmers. Prepared by participants of a workshop on participatory experimentation, African Highlands Initiative, Nairobi, 28 June – 3 July 1999. *Trials with farmers require considerable planning and available checklists of topics for on-station trials are not adequate for planning trials with farmers. This checklist provides details on what should be considered in background and justification, objectives, methods and implementation plan.*

Coe, Richard. 1998. Participatory on-farm experimentation in agroforestry: experiences and the role of biometrics. Invited paper presented at the XIXth International Biometric Conference, Cape Town, South Africa, 14-18 December 1998. *This paper argues that in most cases, new methods for design and analysis in participatory agroforestry experimentation are not needed; rather, well established ideas and methods are available but are often not used.*

Coe, Richard and Franzel, Steven. 1995. Designing on-farm experiments. Report of a workshop held at ICRAF, Nairobi, Kenya. 26-29 June. 91 pp. *(Includes many training exercises and highlights differences in designing type 1 (researcher-designed, researcher-managed), type 2 (researcher/farmer designed, farmer-managed), and type 3 (farmer-designed, farmer-managed) trials).*

*Franzel, S. Coe, R. Cooper, P., Place, F. and Scherr, S.J. Assessing the adoption potential of agroforestry practices in sub-Saharan Africa. Submitted to *Agricultural Systems*. *Paper outlines ICRAF's approach to assessing the feasibility, profitability, and acceptability of agroforestry practices. Includes discussion of types of on-farm trials and methods for assessing adoption potential and defining the boundary conditions of practices.*

Haverkort, B., van der Kamp, J., and Waters-Bayer, A. 1991. Joining farmers' experiments. Experiences in participatory technology development. Intermediate Technology Publications. 103/105 Southhampton Row, London WC1B 4HH UK. (Book) Pounds 13.50 *Includes many case studies of researchers and farmers experimenting together.*

Hildebrand, P.E. and Russell, J.T. 1996. Adaptability analysis. A method for the design, analysis and interpretation of on-farm research-extension. Iowa State University Press, Ames, Iowa. 188 pp. (Book) Fax 1-515-292-3348. \$US 25. *Explains a method and case studies for evaluating performance of agricultural technologies under multiple biophysical and socioeconomic circumstances and for identifying their adaptability to particular environments. Coauthored by an economist and an agronomist.*

McNamara, Nora and Morse, Stephen, 1996. Developing on-farm research: the broad picture. On Stream Publications Ltd. Cloughroe, Blarney, Co. Cork, Ireland. Fax 021-385798. (Book) Collaborative work between Wye College and an NGO in Nigeria. *Chapter headings are The Diocesan Development Services, The Introduction of on-farm research in Igalaland, Nigeria. Results of the farmer level agricultural innovations and response program, Lessons learned, and Conclusions. Price is 10 pounds. Little on agroforestry, but of interest because it discusses collaboration between academics, so emphasis is put on analysis and quantitative data, and an NGO, so emphasis is put on grass roots*

development activities.

*Okali, C., Sumberg, J., and Farrington, J. 1994. Farmer Participatory Research: Rhetoric and reality. London: Intermediate Technology. 159 pp. (book). *A useful overview of how farmer participatory research is being used in a broad range of research and development programs. Chapters include An Introduction to Farmer Participatory Research, Associated themes and concepts, Farmer Participatory Research in Practice, Key issues in implementation, Analysis of current trends and practice, monitoring and evaluation, and linking evaluation indicators to project design.*

Shepherd, K.D. and Roger, J.H. 1991. Approaches to on-farm testing and evaluation of agroforestry technology. Working paper no. 67. ICRAF, Nairobi. 31 pp. *This paper focuses on special problems and complexities of on-farm agroforestry experiments. A main theme is that biophysical questions should be investigated in experiments that have a high degree of control by researchers and that statistically rigorous experiments may not be appropriate for answering socioeconomic questions.*

Stroud, Ann. 1993. Conducting on-farm experiments. CIAT, Apartado Aereo 6713, Cali, Columbia. 118 pp. *This manual focuses on researcher-designed, farmer-managed trials. Chapter headings include Planning an on-farm experiment program, designing on-farm experiments, trial management decisions, implementing experiments, and data collection. There are many practical examples of problems encountered in on-farm trials and how to solve them.*

van Veldhuizen, L., Waters-Bayer, A., and de Zeeuw, H. 1997. Developing technologies with farmers: A trainer's guide for participatory learning. London: Zed Books. 230 pp. (Book). For copies, fax to 0171-833-3960, Zed Books, 7 Cynthia Street, London N1 9JF. *Chapters include basic orientation and skills, Towards an agenda for action, Farmers' experimentation, Spreading and consolidating the participatory technology development process, and References, resources, and contacts.*

Werner, J. 1993. Participatory development of agricultural innovations: Procedures and methods of on-farm research. GTZ. Eschborn, Germany. 251 pp. (Book) For copies write to TZ-Verlagsgesellschaft mbH Postfach 1164, 64373 Robdorf, Germany. *Chapters include Principles and procedures of on-farm research, Communication with farmers, Data collection, Experimentation, and Tools and methods for data analysis and presentation.*

2. Methods

2.1 Farmer participation in selecting treatments for on-farm trials

*Franzel, S., L. Hitimana, and E. Akyeampong. 1995. Farmer participation in on-station tree species selection for agroforestry: a case study from Burundi. *Experimental Agriculture*, 31:27-38, January 1995. *An example of farmers using simple, quantitative methods to decide which trees, among trees in an on-station screening trial, they prefer to plant on their farms.*

*Roothaert, R. and Franzel, S. Farmers' preferences and use of indigenous fodder trees and shrubs in Kenya. Submitted to *Agroforestry Systems*. *This paper reports on a survey in which farmers explained their preferences among indigenous fodder trees and ranked them in importance and selected species that they wanted to test in on-farm trials.*

2.2 Farmer and site selection

Sutherland, A.J. 1986. Managing bias: Farmer selection for on-farm research. Farming Systems Newsletter No. 26. CIMMYT, Nairobi, Kenya. 18 pp. *Looks at farmer selection at various stages of the research sequence: surveys and trials.*

Gedeno, Gemechu. 1986. Selecting representative farmers and sites for on-farm experiments. Farming Systems Newsletter No. 27. CIMMYT, Nairobi, Kenya. 6 pp. *Discusses problems, their causes and possible solutions in selecting farmers and sites.*

Guinand, Yves. 1996. A method to help select farmers for on-farm agroforestry trials, based on wealth ranking. AFRENA Report no. 102. ICRAF: Nairobi. 32 pp. *A practical set of guidelines for defining the wealth categories (income groups) that exist in an area. You can thus find out the wealth status of farmers you are working with in on-farm trials and how representative they are of the community. The method is also useful for selecting farmers for on-farm trials from the categories you are interested in targeting.*

2.3 Farmer assessment: guidelines and methods

Ashby, J.A., 1990. Evaluating technology with farmers: A handbook. CIAT Publication no. 187. Apartado Aereo 6713, Cali, Columbia. 95 pp. *Chapters include When to conduct farmer evaluations, social dynamics of farmer evaluations, establishing a collegiate working relationship with farmers, communication skills, farmer selection, setting up farmer evaluations, the evaluation interview, and group evaluations. The single most useful guidelines that I know of on farmer assessment.*

CIMMYT Economics Program. 1993. Obtain from CIMMYT, Apdo. Postal 6-641, Mexico 6 DF, Mexico The adoption of agricultural technology: A guide for survey design. Mexico. 88 pp. *A good source of information on collecting data on farmer assessment in on-farm trials. Presents many examples of how to present survey data. Chapters include Adoption studies, Measuring adoption, Understanding adoption, Survey organization, and Methods for analyzing adoption patterns.*

Franzel, S. and J.K. Ndufa. 1994. Guidelines for conducting farmer-designed multipurpose tree trials. Draft. ICRAF. 9 pp. *Discusses objectives, farmer and species selection, planting, monitoring and evaluation, and examples of results.*

*Franzel, S. 1996. Developing a questionnaire for a formal survey of rural households. ICRAF *Explains the steps to take in developing a questionnaire. The last thing to do (not the first!) is to dream up questions to ask! Before this you need to clearly state your objectives, the hypotheses you want to test, and the information required to meet your objectives and test your hypotheses. Then it is time to draw up your questions!.*

*Franzel, S., 1999. Use of an indigenous board game, 'bao', for assessing farmers' preferences among alternative agricultural technologies. . ICRAF. Submitted to *Agricultural Economics*. 16 pp. *Explains the use of an indigenous African board game for obtaining farmers' evaluations of different alternatives (e.g., tree species) across different criteria. The method builds on matrix ranking/scoring.*

Gladwin, C.H. 1989. Ethnographic decision tree modelling. Qualitative Research Methods Series 19. Sage Publications. 90 pp. *Whereas econometric models explain how farm and household variables influence adoption, decision tree modeling examines the actual cognitive decision that farmers make*

in deciding whether to use a technology. Examples of other references in this list using decision tree modelling include Darnhofer (1996), Swinkels and Franzel (1997), and Peterson (1999).

Guerrero, M.P., Ashby, J. And Gracia, T. 1993. Farmer evaluations of technology: preference ranking. CIAT Publication no. 212. Obtain from CIAT, Apartado Aereo 6713, Cali, Columbia. 129 pp. *Discusses different methods for farmers to use in assessing alternatives. Includes discussion of matrix ranking.*

Heinrich, G.M. 1992. Strengthening farmer participation through groups: Experiences and lessons from Botswana. On-Farm Client-Oriented Research Discussion Paper No. 3. ISNAR. 31 pp *Examines the formation of farmer research groups for planning and conducting on-farm research. Chapters include group operations and outputs, benefits of the group approach, and management issues.*

Quiros, C. A., Gracia, T., and Ashby, J. 1991. Farmer evaluations of technology: Methodology for open-ended evaluation. Instructional Unit No. 1. Obtain from CIAT. Apartado Aereo 6713, Cali, Columbia Cali, Columbia. 91 pp. *Chapters include The Open-ended evaluation, Formulating questions, Establishing neutrality and clarifying expectations, compiling information, and planning farmer evaluations. Includes training exercises.*

Walters, B.B., Cadelina, A., Cardano, A., and Visitacion. 1999. *Agricultural Systems* 59 (1999) 193-214. *Most adoption studies focus on characteristics of individual farm households or farms; this study focuses on characteristics of villages in Philippines which influence why some villages participate in development activities more readily than others. Includes a useful checklist of general questions to guide investigation of a village's history and how that history may influence adoption.*

2.4 Economic assessment: guidelines and methods

CIMMYT. 1988. From agronomic data to farmer recommendations. An economics training manual. CIMMYT Economics Program. El Batan, Mexico. Obtain from CIMMYT, Apdo. Postal 6-641, Mexico 6 DF, Mexico. *The adoption of agricultural technology* 79 pp. *Written especially for non-economists, this document has lots of practical advice for determining costs and valuing benefits in economic analyses of technology. Focuses on the partial budgeting approach.*

Swinkels, R., Franzel, S., & Shepherd, K. 1994. Economic analysis of on-farm improved fallows in western Kenya. ICRAF Training Note: Case study handout. 13 pp. *Spells out in considerable detail how to do an economic analysis on improved fallows and where all the data come from.*

*Wesseler, J. and Waibel, 1995. H. Participatory farm planning: A guide to fruit tree based farming systems development. GTZ/Philippines-German Fruit Tree Project, 1995. 88 pp. *Chapters include Participatory farm analysis, Quantitative methods of farming systems analysis, and Proposed farm plans. The discussion of economic analysis of multi-year tree crops is particularly useful.*

2.5 Collecting labor data

Collinson, M.P. 1986. Collecting information on rates of work. *Farming Systems Newsletter*. No. 24 & 25. CIMMYT:Nairobi. 13 pp. *Topics include productivity of seasonal labor, problems collecting labor data, farmer estimates of labor requirements, surveys, and work study on trial plots.*

Franzel, S. 1997. Collecting data on labor use in on-farm trials. ICRAF 8pp. *Evaluates the advantages and disadvantages of four different methods of collecting labor data and includes several data forms.*

Spencer, D.S.C. 1993. Collecting meaningful data on labor use in on-farm trials. *Experimental Agriculture*, 29:39-46. *Focuses on the effects of memory bias and the effects of plot size on the collection of labor data.*

2.6 Methodology notes (These are one—page descriptions of a particular method. The descriptions are kept short in hope that more people will be interested in reading them!)

1. Degrande, A., 1999. Assessing farmers' evaluations of agroforestry practices using colored cards.
2. Degrande, A., 1999. Monitoring farmers' adaptation of technologies and options for using the information.
3. Degrande, A., 1999. What has gone wrong? Removing sites from analysis in on-farm trials.
4. Phiri, D. and S. Franzel. 1999. Where are your on-farm trials? Example of a chart showing biophysical and socioeconomic features of different areas where on-farm trials are located.

3. Evaluation of agroforestry practices: examples based on on-farm research (B denotes biophysical analysis, E denotes economic analysis, F denotes farmer assessment, and G, gender analysis)

3.1 Fodder trees

Darnhofer, Ika, 1996. Ethnographic decision modelling of the adoption of Tagasaste, a fodder tree, and oats-vetch among farmers in the highlands of Ethiopia. Draft paper. 47 pp. *This paper provides an example of the use of decision trees in modelling the adoption process.* **F**

*Franzel, Steven, Arimi, Hellen, Murithi, Festus, and Karanja, John. 1999. *Calliandra calothyrsus*: Assessing the early stages of adoption of a fodder tree in the highlands of central Kenya. AFRENA Report No. 127. Agroforestry Research Network for Africa. Nairobi: ICRAF. *Assesses uptake of calliandra by farmers who had hosted calliandra on-farm trials.* **E, F**

Van der Veen, Wiebe, 1993. An economic analysis on farms of alley farming with fodder trees on dairy cows in western Kenya. M.Sc. thesis. Department of Development Economics. Wageningen Agricultural University, The Netherlands. 111 pp. *Includes results and economic analysis of an on-farm Calliandra calothyrsus feeding trial to assess impact on milk production.* **B,E**

3.2. Hedgerow intercropping/contour hedges

David, Soniia 1995. What do farmers think? Farmer evaluations of hedgerow intercropping under semi-arid conditions. *Agroforestry Systems* 32: 15-28. *The author, a sociologist, examines farmers' perceptions of impact, management, and the potential for adoption of hedgerow intercropping in an area of Machakos District, Kenya.* **F**

Fujisaka, S. 1993. A case of farmer adaptation and adoption of contour hedgerows for soil

conservation. *Experimental Agriculture* 29:97-105. *This case study from the Philippines includes biophysical assessments, analysis of labor use, and assessments from farmers who were familiar with the technology but did not adopt.* **B, F**

Fujisaka, S., Jayson, E., and Dapusala, A. 1994. Trees, grasses, and weeds: species choices in farmer-developed contour hedgerows. *Agroforestry Systems* 25:13-22. *A case study from the Philippines. Includes farmer evaluations and use of a decision tree.* **F**

Shepherd, K., Ndufa, J.K., Ohlsson, E., Sjogren, H., and Swinkels, R., 1997. Adoption potential of hedge-row intercropping in the maize-based cropping systems of the highlands of Western Kenya. Part I: Background and agronomic evaluation. *Experimental Agriculture*, 33: 201-210. 1997.. *Assesses problems of analyzing agronomic data in a type 2 trial where there was considerable variation between test and control plots and among farms.* **B**

Swinkels, R. and Franzel, S. 1997. Adoption potential of hedge-row intercropping in the maize-based cropping systems of the highlands of Western Kenya. Part II: Economic and farmers' evaluation. *Experimental Agriculture*, 33: 211-223. 1997. *Includes enterprise budget, decision tree, and assessment of feasibility, acceptability and profitability* **E,F,G**

3.3 Improved fallows

*Degrande, Ann, 1999. Farmer assessment and economic evaluation of shrub fallows in the humid lowlands of Cameroon. Submitted to *Agroforestry Systems*. *Assesses farmers' testing and expansion of improved fallows using *Cajanus cajan*. Economic analysis and farmers' assessment are very positive; wider dissemination requires a targeted extension approach and an effective strategy for seed supply.* **B,E,F,G**

Franzel, S. 1999. Socioeconomic factors affecting the adoption potential of improved tree fallows in Africa. *Agroforestry Systems* Vol 47, 305-321. *Reviews the development of improved fallows in three countries, Kenya, Cameroon, and Zambia* **E, F,G**

*Franzel, S., Phiri, D., and Kwesiga, F.R. 1999. Assessing the adoption potential of improved tree fallows in Eastern Zambia AFRENA. working paper no. 124. Nairobi: ICRAF *This paper describes the type 2 and type 3 trials being conducted on improved fallows and presents results and a section on an adaptive research and dissemination network composed of researchers, NGOs, extension services and farmer groups.* **B,E,F,G**

Kwesiga, F.R., Franzel, S., Place, F., Phiri, D., and Simwanza, C.P. 1999. *Sesbania sesban* improved fallows in eastern Zambia: their inception, development, and farmer enthusiasm. *Agroforestry Systems* 47, 49-66.. *Paper examines the development of improved fallow practices in eastern Zambia which are now being planted by about 3,000 farmers.* **B,E,F**

Peterson, J.S. 1999. Kubweletza Nthaka: Decision trees and improved fallows in the Eastern Province of Zambia. University of Florida/ICRAF. Draft. *This paper models and explains the decisions that male and female farmers make in deciding whether to plant improved tree fallows. While both males and females are actively planting improved fallows, their reasons for participating and not participating are somewhat different.* **F,G**

*Phiri, D., Franzel, S., Mafongoya, P., Jere, I., Katanga, R., and Phiri, S. 1999. Who is using the new technology? A case study of the association of wealth status and gender with the planting of improved tree fallows in Eastern Province, Zambia. *Describes a wealth ranking exercise in which community members identify the different wealth groups in their communities and determine each household's wealth status. Both women and men were found to be planting improved fallows in similar proportions. There was a strong association between wealth and planting improved fallows but substantial numbers of poor households were planting them.* **F,G**

Place, F and Mwanza, S. 1995. Cost-benefit analysis of improved fallows in eastern Zambia. *This is a good example of cost-benefit analysis based on on-station trials.* **E**

Swinkels, R., Franzel, S., Shepherd, K., Ohlsson, E., and Ndufa, J. 1997. The economics of short rotation improved fallows: evidence from areas of high population density in western Kenya. 21 pp. *Agricultural Systems*, 55: 99-121. *Includes results of a researcher/farmer-designed, farmer-managed improved fallow trial and enterprise budget* **B,E**

3.4 Tree planting for timber and firewood

Akyeampong, E., L. Hitimana, P. Muyemana, and S. Franzel, 1995. The agronomic and economic assessment of banana, bean, and tree intercropping in the highlands of Burundi: An interim assessment. *Agroforestry Systems*, 31:3:200-210. *Two not commonly used methods are explained: Farmers and other experts estimate the value of trees in the trials and economic analysis incorporates the effect of yield variability on variability in net present values.* **B, E**

*Ramadhani, T., R. Otsyina, and S. Franzel, Improving household incomes and reducing deforestation; the example of rotational woodlots in the Tabora area, Tanzania. Draft. *Assesses the uptake of woodlots by tobacco farmers to meet their fuelwood needs and improve soil fertility. Estimates are made of the forest area saved by growing woodlots instead of purchasing wood from the forest.* **B,E,F**

*Tefera, Almaz., M.R.Rao, M.N. Mathuva, and K. Atta-Krah. 1999. Farmer-participatory evaluation of *Grevillea robusta* in boundary plantings in semi-arid Kenya. *Good example of integration of biophysical, economic, and farmer assessment in an on-farm trial. Assesses a farmer-designed trial in the Machakos area including farmer expansion following the trial.* **B, E, F**

Tyndall, Brad, 1996. The socioeconomics of *Grevillea robusta* within the coffee land-use system of Kenya. AFRENA paper no. 109. ICRAF, Nairobi. *Includes farmer assessment of advantages and disadvantages of grevillea and alternative species, crop yield loss and economic analysis of grevillea when planted along a maize field, and a multivariate adoption model examining factors affecting farmers' decisions to plant grevillea.* **B,E,F,G**

3.5 Live fences and windbreaks

Ayuk, Elias. 1996. On measuring the economic importance of live hedges to household economies in Central Plateau of Burkina Faso. ICRAF, Nairobi. *Compares the costs and returns of live fences to dead fences, which farmers currently construct from wood and crop residues.* **E**

Ayuk, Elias. 1997. Adoption of agroforestry technology: The case of live hedges in the Central Plateau of Burkina Faso. *Agricultural Systems* 54:2 189-206. *Uses a logit econometric model to study farmers'*

decision process and factors affecting adoption of live hedges. Also includes quantitative assessments of farmers' perceptions of the advantages and disadvantages of live hedges and their criteria for choice of species. **F, E**

Satin, M.S. 1998. A socioeconomic evaluation of live fencing and windbreak agroforestry technologies in Kaolack, Senegal. M.Sc. thesis, Dept. of Agricultural and Natural Resource Economics, West Virginia University. *Includes partial budget, cost-benefit analysis, and a logit model to assess the influence of selected socioeconomic factors on adoption.* **E**

3.6 Analyses of other or multiple technologies

Adesina, A.A. and Coulibaly, O.N. 1998. Policy and competitiveness of agroforestry-based technologies for maize production in Cameroon: An application of policy analysis matrix. *Agricultural Economics* 19 1-13. *Paper assesses profitability from society's point of view and impact of policy shifts on the competitiveness of maize production under these technologies.* **E**

Bekele, Taye. 1996. Adoption of hedgerow intercropping and two upper-storey species in Western Kenya. M.Sc. thesis. Dept. of Forestry. Swedish Univ. Of Ag. Sciences. 80 pp. *Describes adoption process among farmers who had participated in farmer-designed, farmer-managed trials. Includes survey of neighboring farmers to see if they had also tested the species.* **F**

Franzel, S., Ndufa, J.K., and Obonyo, C. 1996. Farmer-designed agroforestry tree trials: Farmers' experiences with newly introduced tree species in Western Kenya. ICRAF. 16 pp. *This paper describes the results of a farmer-designed tree trial and has examples of the kinds of qualitative and quantitative analyses that can be conducted in type 3 trials.* **B,F,G**

Guinand, Y. 1996. Impact assessment study of Two Wings Agroforestry Groups, Kabale District, Uganda. Afrena Report No. 101. Nairobi. 33 pages. *Not an impact assessment per se but examines tree planting, niches, and management by different wealth groups, gender, and household types* **F,G**

*ICRAF, 1997. excerpt from Annual Report, 1996. Biomass transfer and integrated use of phosphorus fertilizer. P. 136-147 *Includes biophysical assessments and economic analysis of results of a researcher-designed, farmer-managed biomass transfer trial./ The trial involves applications of tithonia diversifolia on maize and kale in western Kenya.* **B, E**

Jama, B., Swinkels, R.A., and Buresh, R.J. 1997. Agronomic and economic evaluation of organic and inorganic sources of phosphorus in western Kenya. *Agronomy Journal*. 89:4. 597-604. *Presents an economic analysis of a researcher-designed, researcher-managed trial. Organic sources assessed include cattle manure and Calliandra calothyrsus.* **E**

Obonyo, O.C. 1995. Report of the group meetings held with farmer designed agroforestry tree trial farmers of Kisumu, Vihiga, and Siaya Districts. National Agroforestry Research Station, Maseno. 10 pp. *This document reports on farmer meetings held to evaluate the tree species included in the trials.* **F**

Place, F. (Compiler) 1995. An ex-ante impact analysis of selected agroforestry technologies in the SALWA network. ICRAF. 16 pp. *Includes economic analyses of live fences, fodder banks, park lands, and hedgerow intercropping, based mostly on data from on-station trials.* **E**

Place, F. (Compiler) 1995. Cost-benefit analyses of selected agroforestry technologies in the Southern African AFRENA. ICRAF. 12 pp. *Includes economic analyses of improved fallows, relay cropping, hedgerow intercropping, and biomass transfer, based mostly on data from on-station trials.* **E**

van Duijl, Erika, 1997. Monitoring women's tree planting in Kabale District, Uganda. A study of farmers' preferences among tree species and planting niches. ICRAF. 48 pp. *This study focuses on farmers' experiences with four species and includes review of tree-planting activities of women in Kabale and tree planting constraints.* **F,G**

4. Impact assessment

Place, F. 1997. A methodology for a participatory approach to impact assessment: implications from village workshops in Eastern Province, Zambia. ICRAF. 1997 *Describes two village workshops in which farmers expressed their views on the likely impacts of improved fallows on their farms, households, and villages, and how these impacts might be monitored.*

*Kristjanson, P., F. Place, S. Franzel, and P.K. Thornton, Assessing Research Impact on Poverty: Starting with farmers. *Food Policy*. In press. *Describes examples of farmer workshops from five countries to find out farmers assessments and expectations of impacts from technologies they are testing and using.*

5. Institutionalizing participatory research

Ashby, J.A. and Sperling, L. 1995. Institutionalizing participatory, client-driven research and technology development in agriculture. *Development and Change* 26:4: 753-770. *Main issues discussed include creating a client-driven agenda, decentralizing technology development, developing farmer capacity to lead adaptive research testing, and accountability sharing.*

Garrity, D.P., Mercado, A., and Stark, M. 1998. Building the smallholder into successful natural resource management at the watershed scale. ICRAF Southeast Asian Regional Research Programme. 10 pp. *Assess the adoption of a low-labor, zero-cash-cost conservation practice based on natural vegetative strips in Claveria, northern Mindanao, Philippines. Discusses the development of farmer conservation organizations in the area and the involvement and support of local government, village leaders, research and extension.*