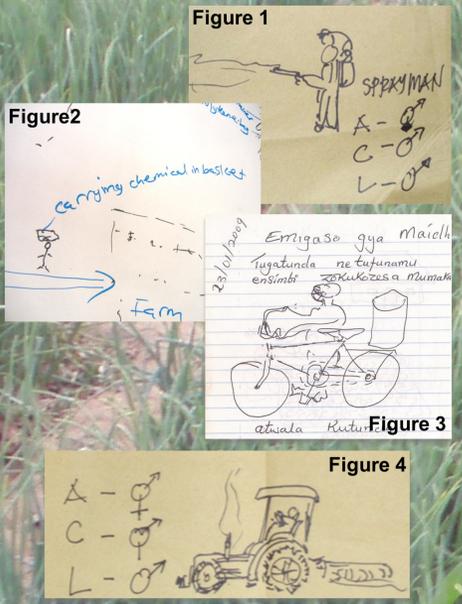
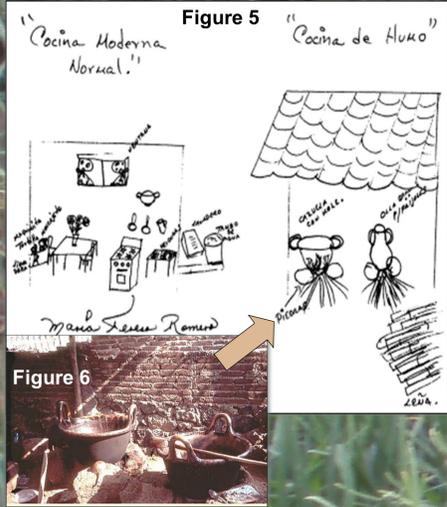
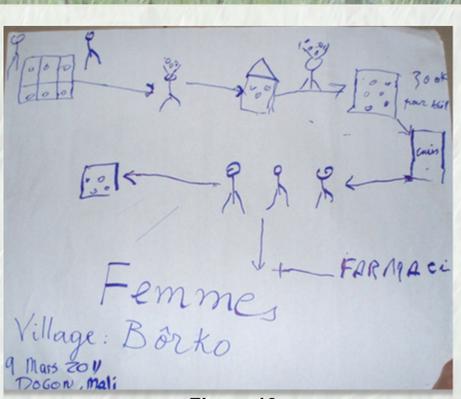


Gender and Participatory Mapping: Local Knowledge and Empowerment in Development Research

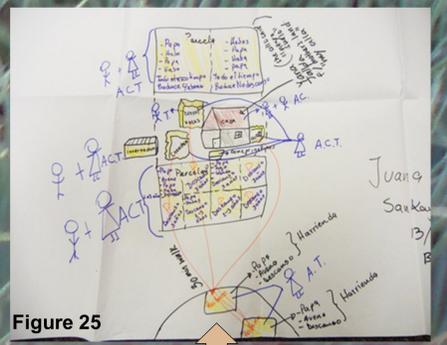
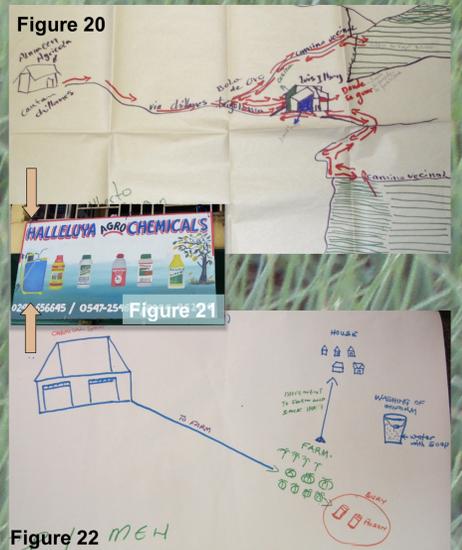
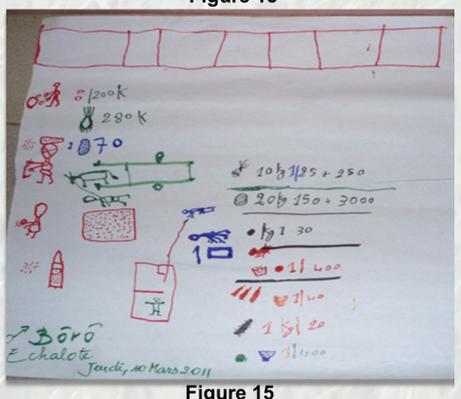
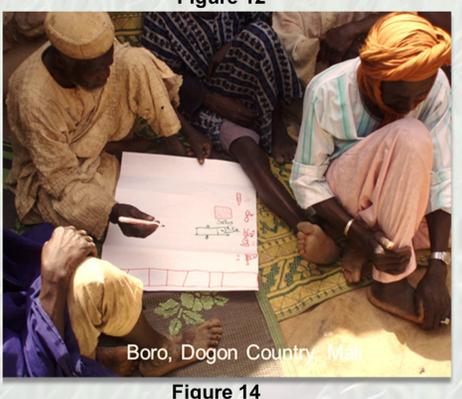
1. Abstract
Participatory mapping as a research technique is a means for women to express their spaces and resources. This poster explores mapping as both a process and product in field work with smallholder farmers in Latin America, Africa, and Asia. It draws on experiences including women and mapping gendered spaces. Examples include mapping Kitchenspace, mapping the "path of the peanut," the "path of the pesticide," and agricultural value chains. It considers the challenges and benefits of using participatory mapping, gendered and non-gendered findings, and the role of the mapping facilitator. The authors conclude that participatory mapping provides opportunities for semi-literate and illiterate women to contribute their knowledge and perspectives to development research projects as well as providing pedagogical opportunities for action research. Discussion with mapping participants and a gender analysis of the resulting maps can contribute to improved understanding of social, cultural, economic, and environmental issues.



Dr. Maria Elisa Christie, Dr. Candice Luebbering, Keri Agriesti, Megan Byrne, Kellyn Montgomery, Emily Van Houweling, Laura Zselezcky, and Mary Harman
Office of International Research, Education, and Development (OIRE), Virginia Tech

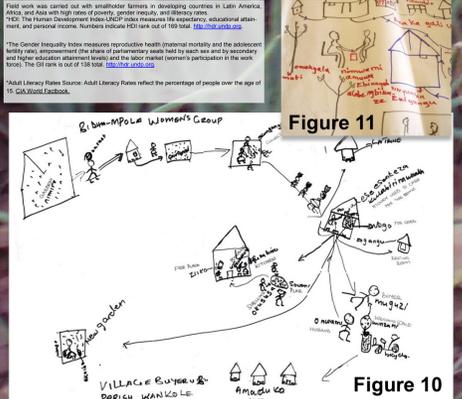
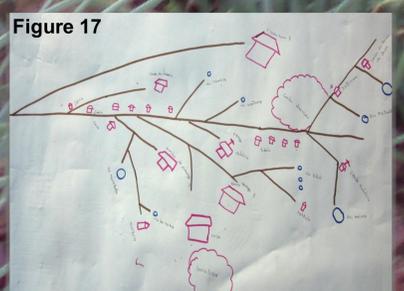


2. Introduction
This research explores gendered aspects of participatory mapping (Rocheleau 1995). Recognizing that local people have a wealth of knowledge about their surroundings in greater detail than any outsider could possess (Herlihy 2003), the open communication of the participatory mapping process allows researchers to gather more information than they would through other methods; it allows them to begin to understand their participants' thought processes and priorities (Mascarenhas & Kumar 1991). The mapping process helps break down communication barriers that can exist at the onset of a project (Shah et al. 1991), serving, as Baohua (2005) states, as a good 'entry point' for researchers to learn about locals' lives and resources. Researchers take on new roles as facilitators and learners (Cornwall 1995). This method creates opportunities for women to map their spaces and priorities.



Human Development Index			
Country	HDI (2010)	Gender Inequality Index (2008)	Adult Literacy Rate
Bolivia	95	96	Total population: 86.7% Male: 93.1% Female: 80.7% (2001 census)
Ecuador	77	86	Total population: 91% Male: 92.3% Female: 89.7% (2001 census)
Ghana	130	114	Total population: 57.9% Male: 66.4% Female: 48.6% (2000 census)
India	119	122	Total population: 61% Male: 73.4% Female: 47.8% (2001 census)
Indonesia	108	100	Total population: 90.4% male: 94% female: 86.8% (2004 est.)
Kenya	128	117	Total population: 85.1% male: 90.8% female: 79.7% (2003 est.)
Mali	160	135	Total population: 46.4% male: 53.5% female: 39.6% (2003 est.)
Mozambique	165	111	Total population: 47.6% male: 63.5% female: 32.7% (2003 est.)
Philippines	97	78	Total population: 92.6% male: 92.5% female: 92.7% (2000 census)
Uganda	143	109	Total population: 75% male: 81.8% female: 65.5% (2005 est.)
United States	4	37	Total population: 99% male: 99% female: 99% (2003 est.)

3. Methods
A team composed of graduate students and faculty at Virginia Tech used mapping as a low-tech, qualitative technique, adopting it for use with different cultures, materials, and topics to better include women's priorities and perspectives in development research. Field work was carried out with smallholder farmers in developing countries in Latin America, Africa, and Asia with high rates of poverty, gender inequity, and illiteracy (see Table). Research subjects drew maps depicting their livelihoods and the gendered nature of access, control, and labor over resources (Figures 1-4). Mapping was combined with other methods such as participant observation, focus group discussions, interviews, and use of GPS. This allowed for triangulation of methods in the final analysis. Maps included:
1. Kitchenspace: spaces of food preparation and processing shows technology and cultural reproduction in women's hands in Mexico and Mali (Figures 20-22);
2. The "path of the pesticide" from market to its final destination reveals perceptions and practices relevant to pesticide safety in Ecuador and Ghana (Figures 10-12);
3. The tomato value chain from field to market in Mali shows control of transportation and income and allows for discussion of pest-transmitted diseases causing damage to crops (Figures 12-15);
4. Major water sources used in the community in Mozambique differed between men and women (Figures 16-18);
5. The "path of the peanut" in Uganda (Figures 10-11) helped researchers understand the opportunities for mitigation and prevention of aflatoxin contamination among peanut farmers in Uganda and Kenya; the path went from harvest in the field to the final destination of the peanut;
6. Knowledge and perceptions of soils also showed gendered access to pasture and crop land in the Andean highlands in Bolivia (Figures 25-26); and
7. A mobility map in Uganda measured time and distance to key places including agricultural extension information sources (Figure 24).



4. Findings & Discussion

- Initial research in Mexico revealed dualities in nature/society relations through kitchenspace (Christie 2004; Figures 5-6).
- The "path of the peanut" maps showed that women provide most of the labor for post-harvest activities and are more aware of mold and bitterness associated with aflatoxins than men (Figure 10-11).
- Soils maps in Bolivia signaled the need to consider women's access to pasture land in conservation agriculture (Figure 25).
- The "path of the pesticide" illustrated the final destination of chemicals in containers stored and discarded in the field (Figure 22) or returned to the kitchen as residues on food (Figure 20).
- Women mapping the value chain maps first drew the mortar and pestle used for pounding onions for drying and sale, a livelihood strategy challenged by the soon-to-be completed processing plant that would take an important economic enterprise out of women's hands (Figures 7-9).
- Maps revealed gendered differences in access to transportation and mobility (Figures 2, 3, and 24).

All maps served to identify specific and gendered spaces that are important for future research, such as the storage place where decision-making processes determine whether peanuts go to the farm as seed, the house as food, or the market for sale (Figures 10-11). Several types of maps revealed disagreement between women and men over the destination of resources obtained from the sale of farm products at the market (Figure 13 and 15). Mapping in sex-disaggregated groups gives women opportunities to provide their perspective whereas these are often obscured by men taking the lead in cultures where women are silent with men present. Group work was also important given women's higher rates of illiteracy and discomfort holding a marker even for drawing pictures; at least some (usually younger) women in the groups were always able to read and write—usually directed by the older women. The facilitator's intervention beyond asking a prompt question can interject bias but is usually necessary to move the process forward.



References
Christie, M. E. 2004. Kitchenspace, fiestas, and cultural reproduction in Mexican house-hold gardens. *The Geographical Review* 94(3): 368-390.
Cornwall, A. & R. Jewkes. 1995. What is participatory research? *Social Science and Medicine* 41: 1667-1676.
Goebel, A. 1998. Process, perception and power: Notes from 'participatory' research in a Zimbabwean resettlement area. *Development and Change* 29: 277-305.
Mascarenhas, J. & P. D. P. Kumar. 1991. Participatory mapping and modeling users' notes. *Rapid Rural Appraisal Notes* 12: 9-20.
Rocheleau, Diane. 1995. Maps, Numbers, Text, and Context: Mixing Methods in Feminist Political Ecology. *The Professional Geographer* 47(4): 458-466.
Shah, P., G. Bharadwaj, & R. Ambastha. 1991. Farmers as analysts and facilitators in Participatory Rural Appraisal & Planning. *Rapid Rural Appraisal Notes* 13: 51-58.

Acknowledgements
This research was made possible through support provided by the Fulbright Program; Peanut, Integrated Pest Management, and Sustainable Agriculture and Natural Resource Management Collaborative Research Support Programs (Peanut, IPM, and SANREM CRSPs) funded by USAID cooperative agreement Nos. ECG-A-00-07-00001-00, EPP-A-00-04-00016-00, and EPP-A-00-04-00013-00, respectively. In addition, the Virginia Tech Department of Geography, Graduate Student Assembly (GSA) Graduate Research Development Program (GRDP) and the College of Architecture and Urban Studies and the School of Public and International Affairs. Carried out collaboration with the Council for Scientific and Industrial Research - Crop Research Institute (CSI-CRI) of Ghana, and Fundación PROINPA - Fundación for Research and Promotion of Andean Products.