

Dr. Maria Elisa Christie, Dr. Candice Luebbering, Laura Zselezky, Keri Agriesti, and Mary Harman

Virginia Tech

1. Abstract
Participatory mapping can be used to identify gender differences in the landscape. Beginning with women mapping dualities in "kitchenspace" in Mexico, researchers used this qualitative research technique to map the "path of the peanut," the "path of the pesticide," and agricultural value chains. In countries where women have considerably lower literacy rates than men, participatory mapping can help increase women's participation in development research. In addition, working in women-only and men-only groups is a strategy for collecting sex-disaggregated spatial data that lends itself to gender analysis. Findings include the importance of food preparation spaces and gendered differences in access to transportation.

2. Introduction
This research explores gendered aspects of participatory mapping (Christie 2004; Rocheleau 1995). Recognizing that local people have knowledge about their surroundings in greater detail than any outsider could possess (Herlihy 2003), the open communication of the participatory mapping process allows development researchers gather more information from and about local villagers and villages than they would through other methods; it allows them to begin to understand participants' thought processes and priorities (Mascarenhas & Kumar 1991). The mapping process serves as a good 'entry point' to learn about locals' lives and resources (Baohua 2005). This method creates opportunities for women to map their spaces and priorities (Christie 2006).

3. Methods
Field work was carried out with women in semi-urban communities in Mexico, and with smallholder farmers in Mali, Ghana, and Uganda. Research subjects were divided into men-only and women-only groups; they drew maps depicting their everyday lives and livelihoods (Figures 3 and 13). Mapping was one of several activities, and was combined with other methods such as participant observation and interviews. Maps included:
1. Kitchenspace: spaces of food preparation and processing shows technology and cultural reproduction in women's hands in Mexico and Mali (Figures 1-5);
2. The "path of the peanut" in Uganda (Figures 6-8) helped researchers understand the opportunities for mitigation and prevention of aflatoxin contamination among peanut farmers in Uganda and Kenya and showed decision-making over proceeds from sales;
3. The "path of the pesticide" from market to its final destination reveals perceptions and practices relevant to pesticide safety in Ghana (Figures 9 and 10);
4. 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 11-14).



Figure 1

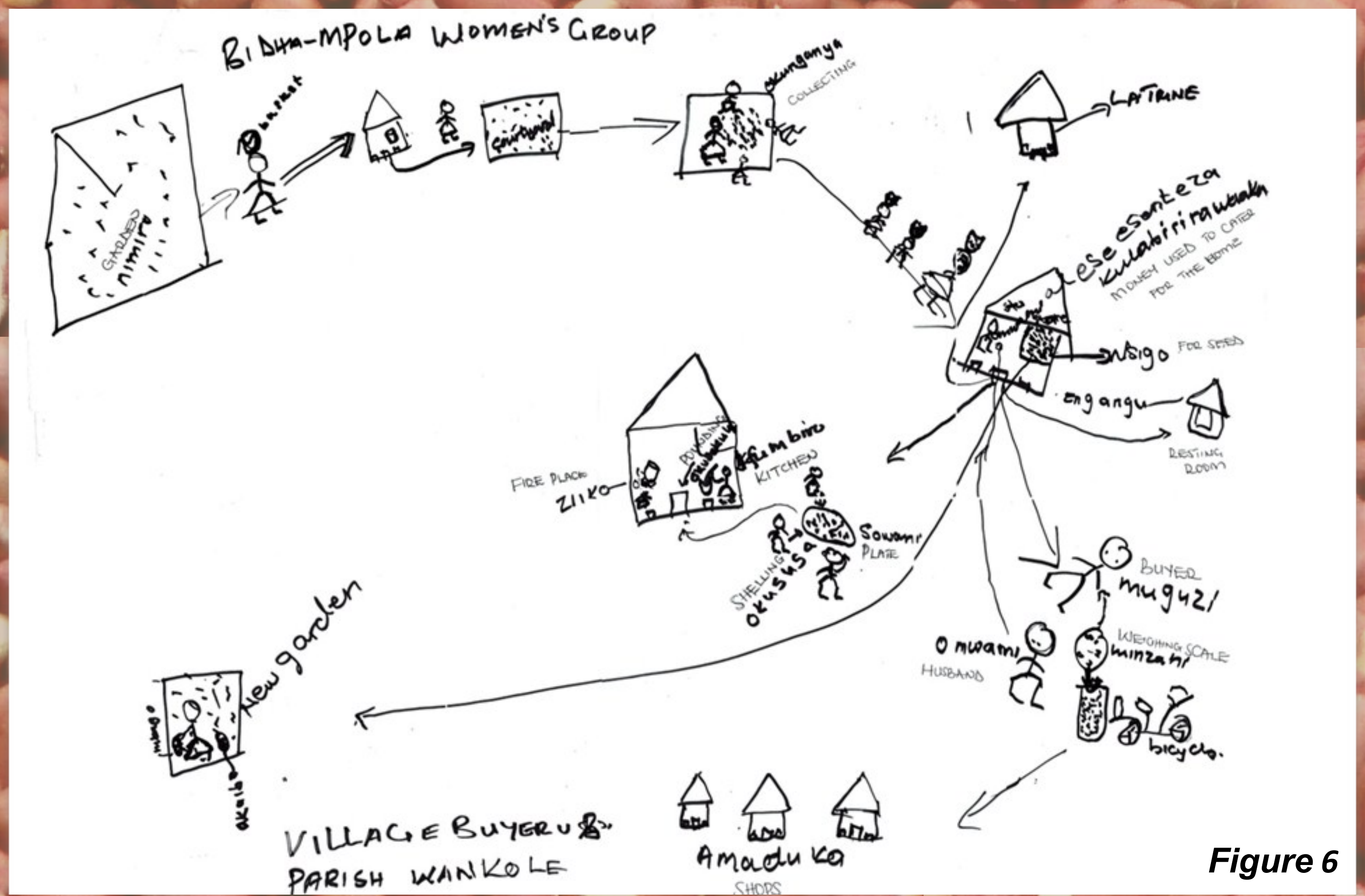


Figure 6

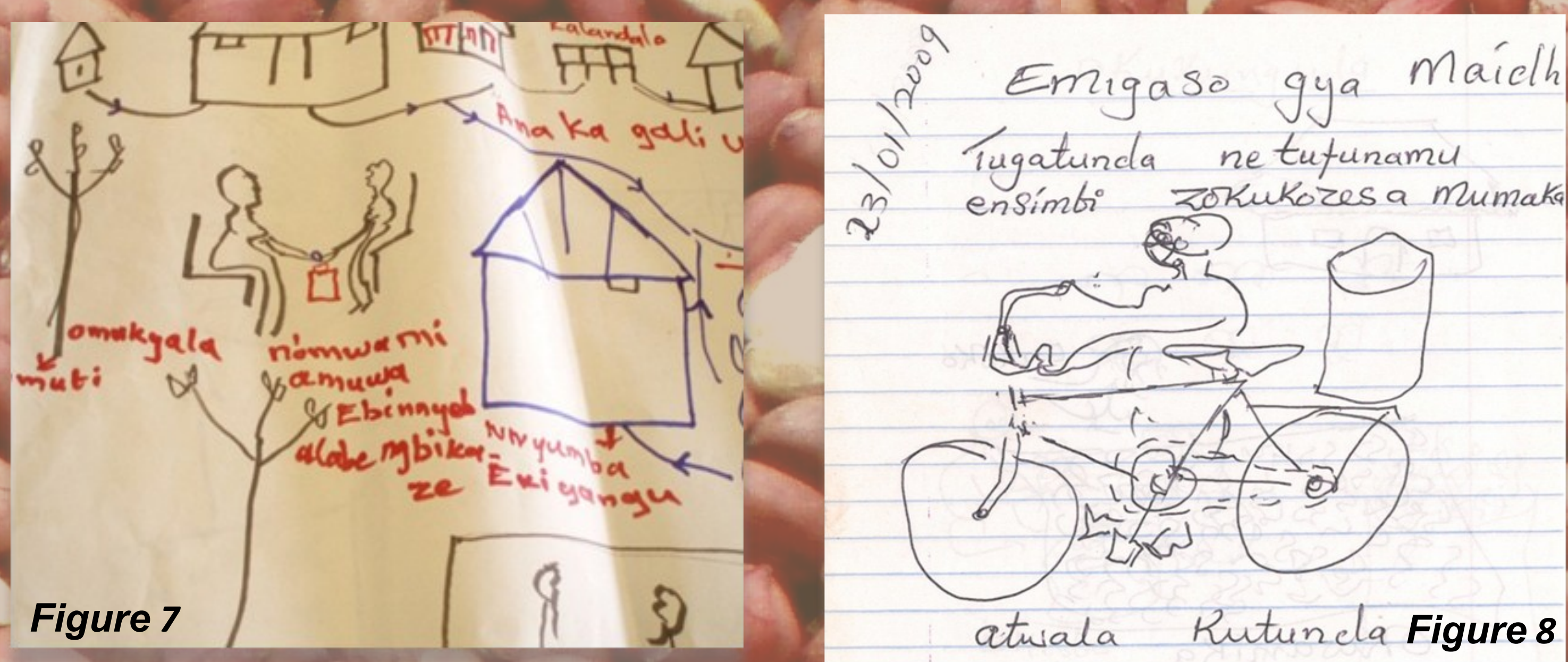


Figure 7

Figure 8



Figure 11

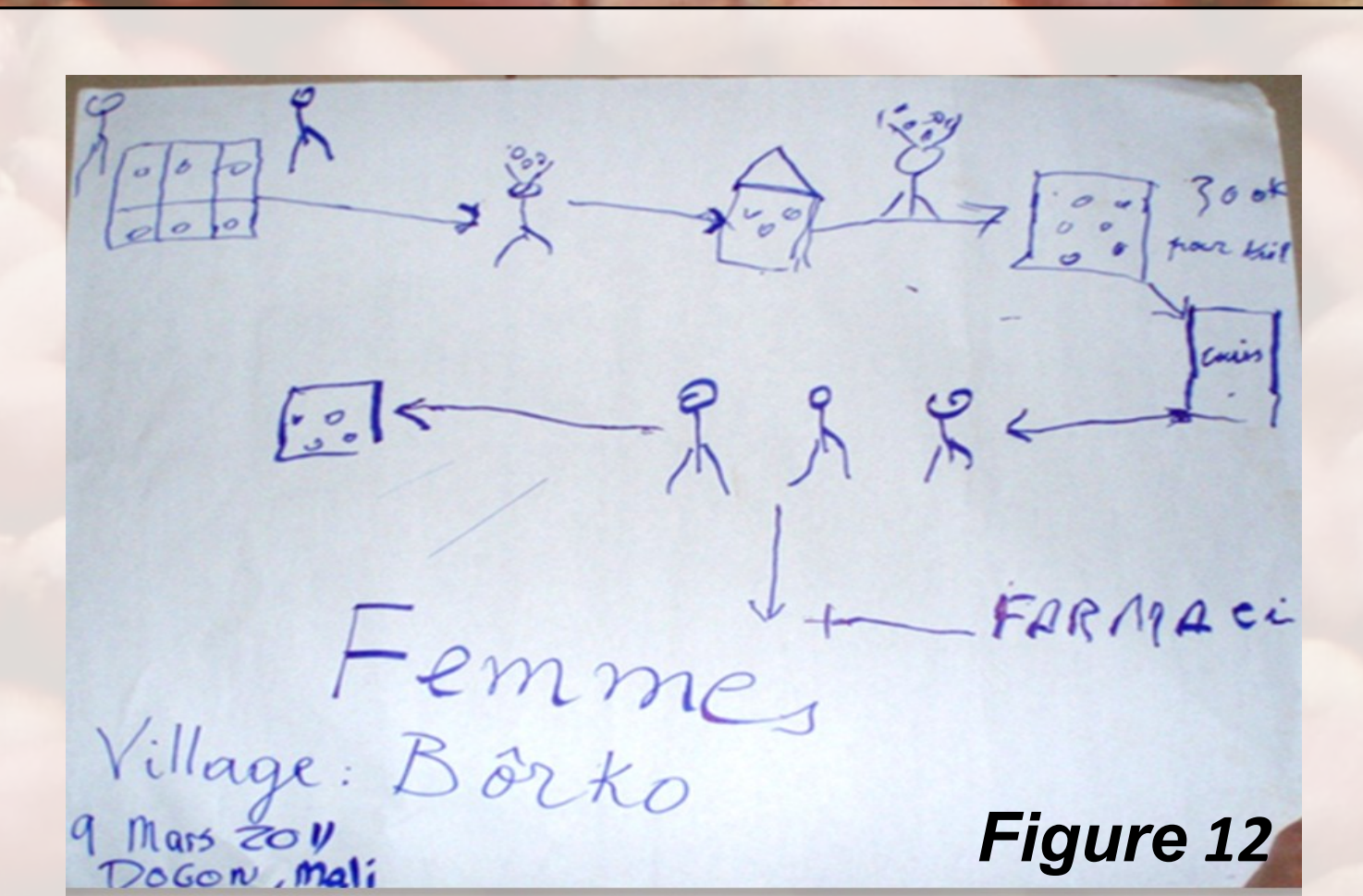


Figure 12



Figure 13

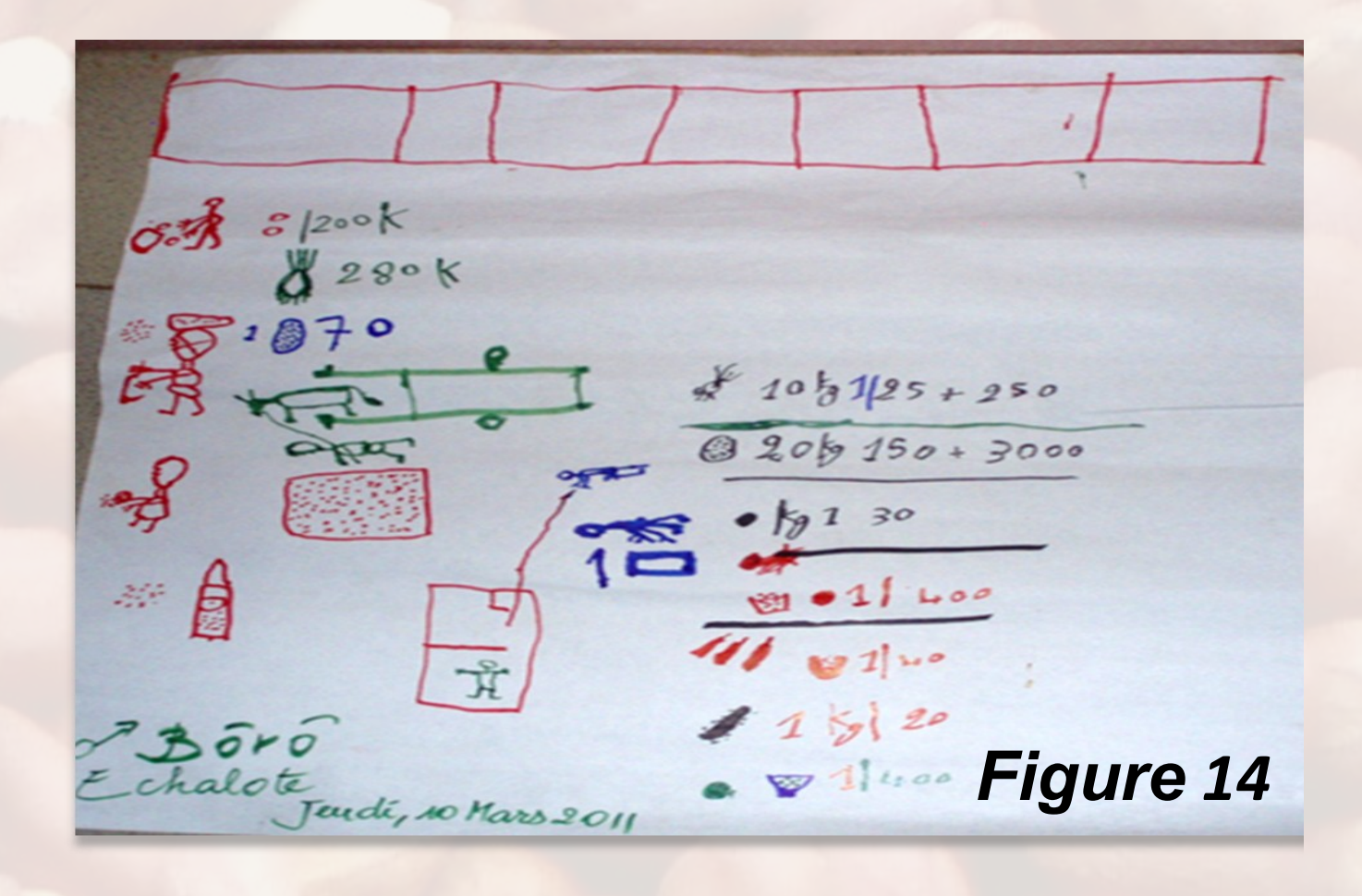


Figure 14



Figure 3

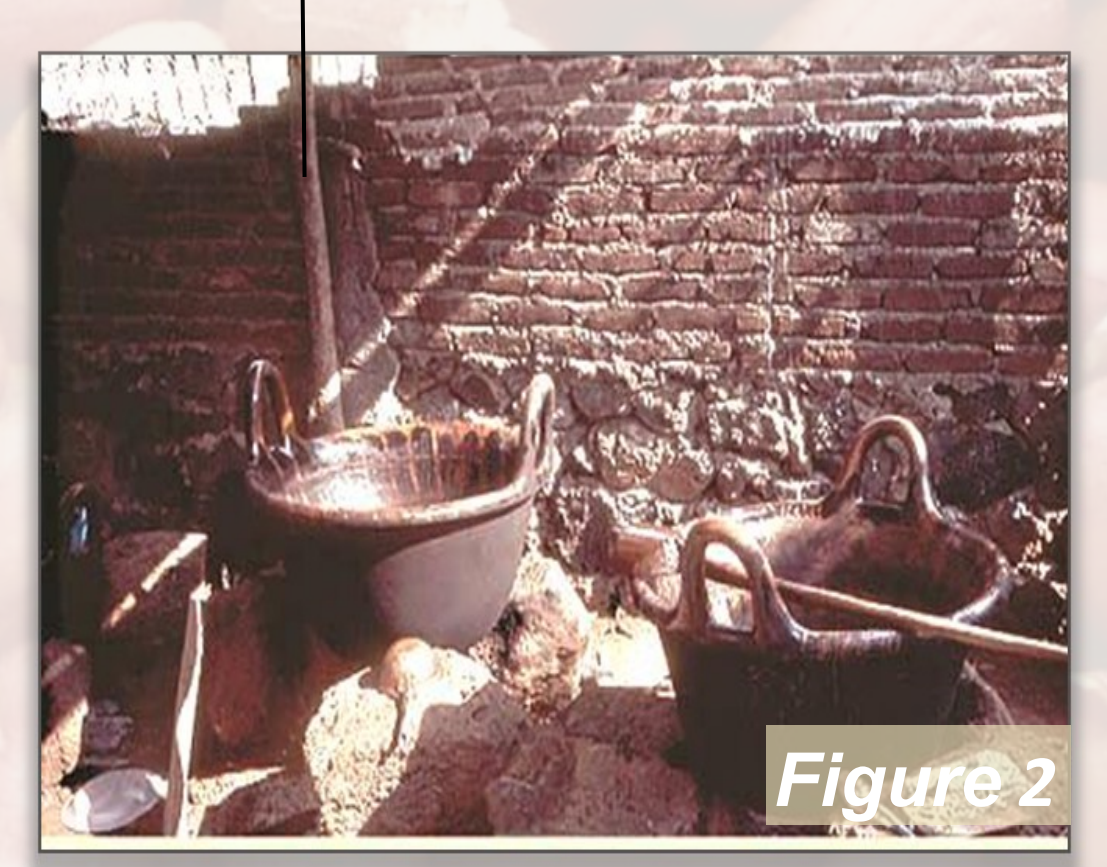


Figure 2

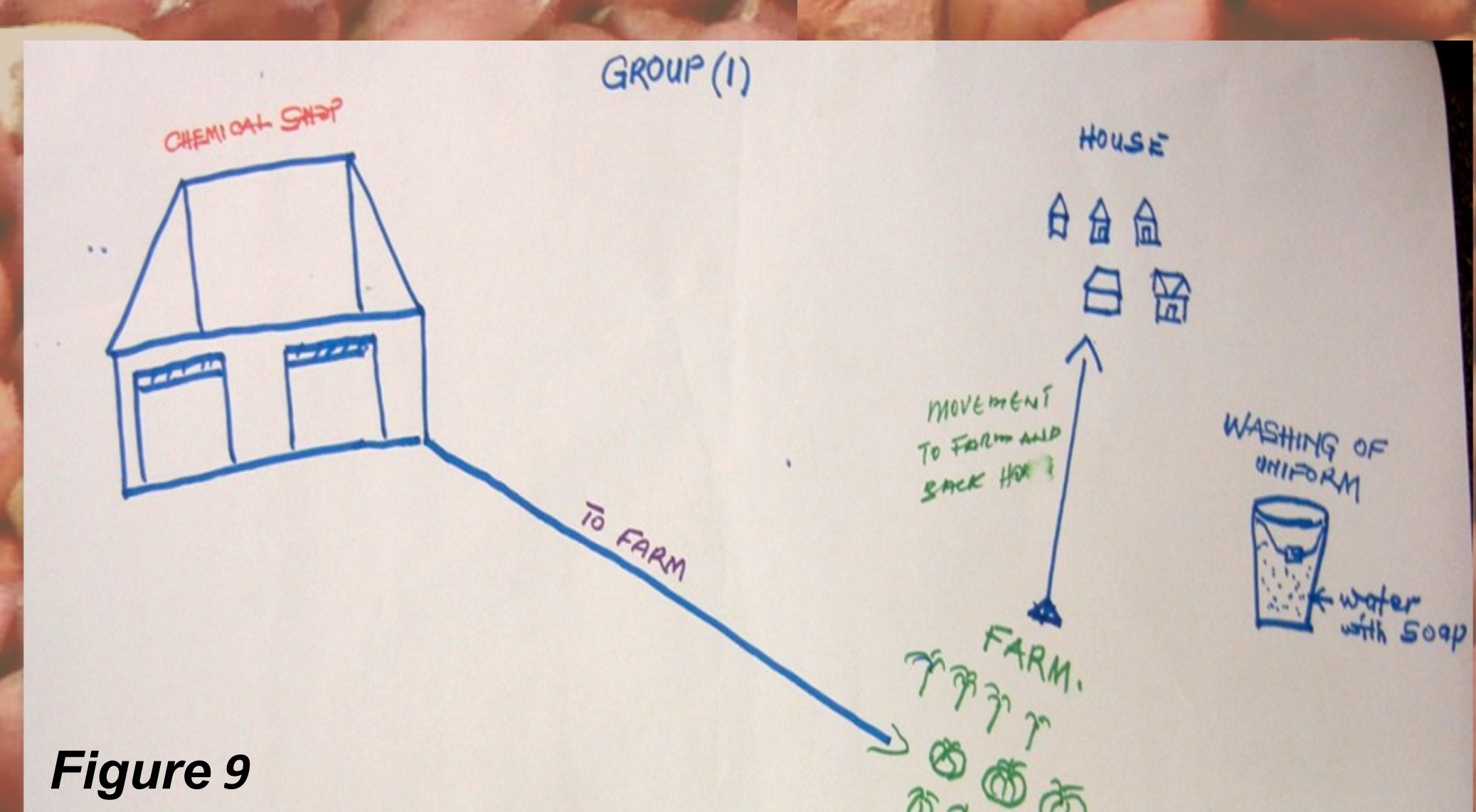


Figure 9

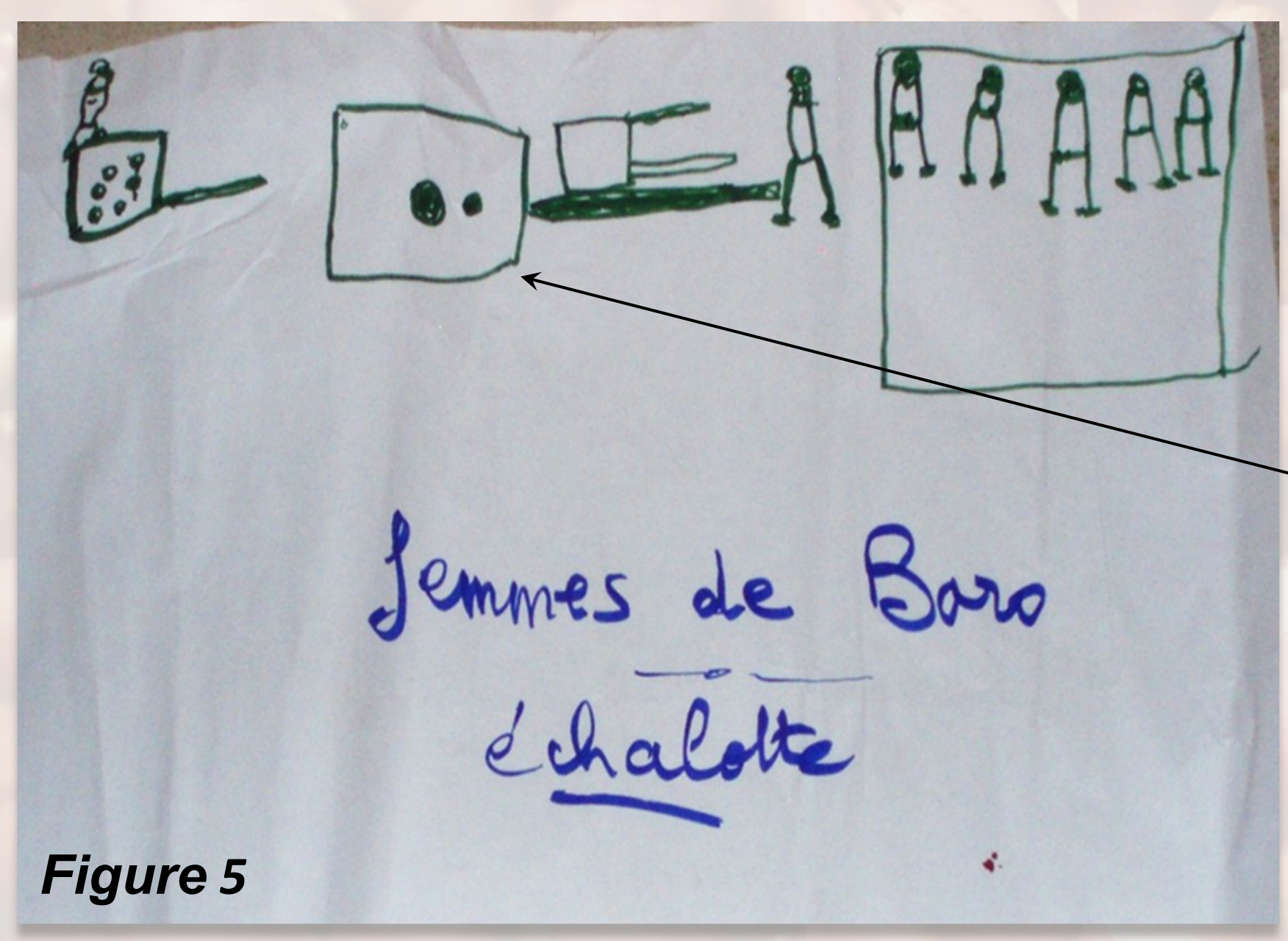


Figure 5



Figure 4

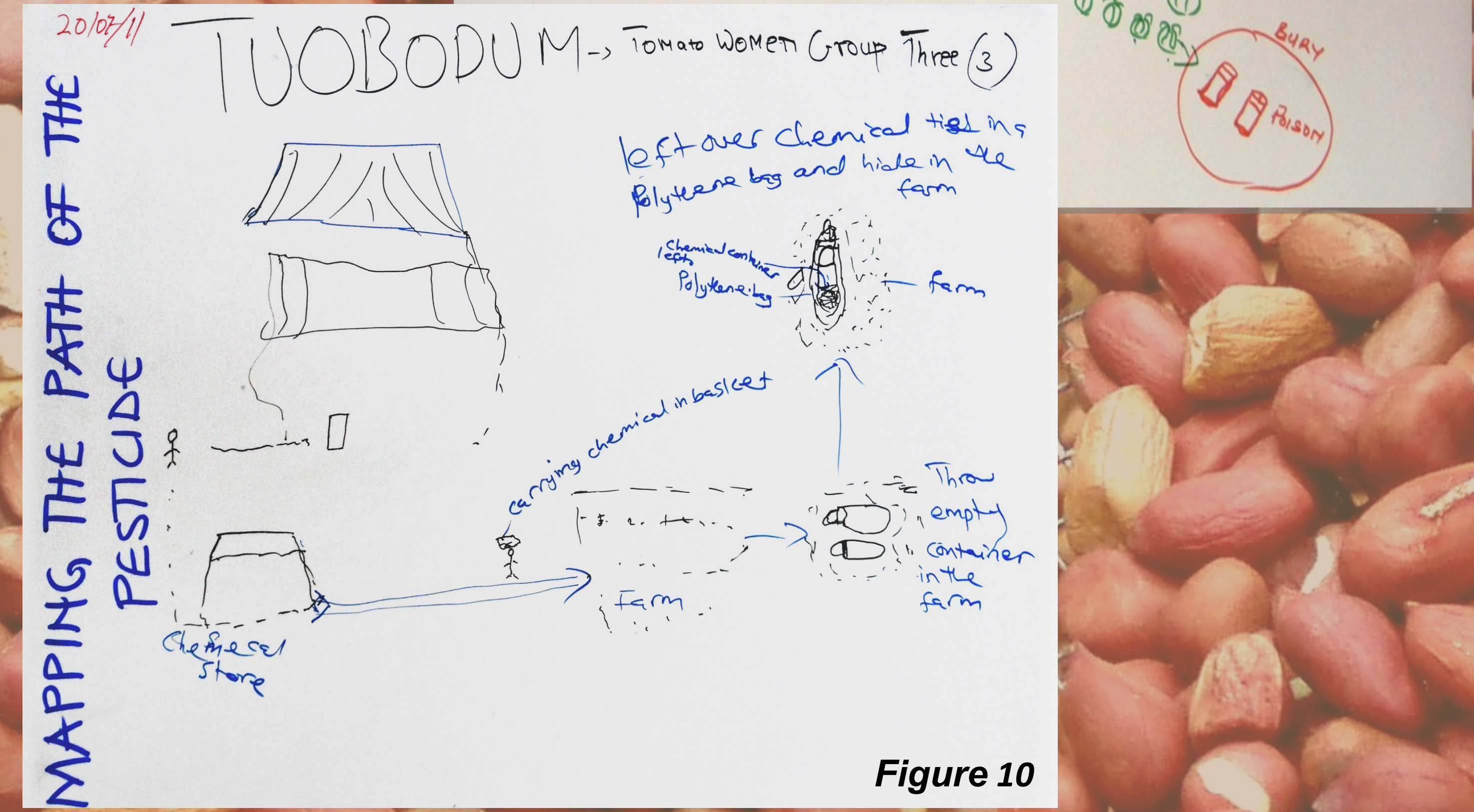


Figure 10

4. Findings & Discussion

- Initial research in Mexico revealed dualities in nature/society relations through kitchenspace and the importance of food preparation in building and sustaining social reciprocity networks (Christie 2004 and 2006; Figures 1 and 2).
- 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 due largely to their role shelling and pounding peanuts for cooking (Figure 6-8).
- The path of the pesticide illustrated the final destination of chemicals in containers stored and discarded in the field; it also showed gender differences in access to transportation (Figure 9 and 10).
- Women mapping the path of their onions from harvest to market first drew the mortar and pestle they 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 literally out of women's hands (Figures 7-9).
- Maps consistently revealed gendered differences in access to transportation, with women carrying pesticides on their heads from the store to their fields, men carrying peanuts to market on bicycles in Uganda, and men drawing vehicles that they control for transporting tomatoes to market (Figures 10, 8, and 14).

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 6 and 7). 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.

5. Conclusion
Participatory mapping engages research subjects—including women—in new and exciting ways that allow them to contribute their ideas and enjoy what can otherwise be a tedious, boring interview session.

References
Baohua, Z. 1995. Empowering communities through mapping: Evaluation of participatory mapping in two Han villages, Yunnan province, P. R. China. In Mapping Communities: Ethics, Values, Practice, J. Fox, K. Christie, M. E. 2004. Kitchenspace, fiestas, and cultural reproduction in Mexican house-hol gardens. The Geographical Review 94(3): 388-390.
Christie, M. E. 2006. Kitchenspace: Gendered Territory in Central Mexico. Savouring the Kitchen, Special Issue on Kitchens (Part 2): Gender Place and Culture, 13(6).
Goebel, A. 1998. Process, perception and power: Notes from 'Participatory' research in a Zimbabwean resettlement area. Development and Change 29: 277-305.
Herlihy, P., and G. Knapp. 2003. Maps of, by, and for the Peoples of Latin America. Human Organization 62(4): 303-314.
Rocheleau, Diane. 1995. Maps, Numbers, Text, and Context: Mixing Methods in Feminist Participatory Mapping. The Professional Geographer 47(4): 458-466.

Acknowledgments
This research was made possible through support provided by the Peanut, and the Integrated Pest Management Collaborative Research Support Programs (Peanut and IPM CRSPs) funded by USAID cooperative agreements ECG-A-00-07-00001-00, EPP-A-00-04-00016-00, as well as the IPM CRSP Associate Award (Mali: Building Local Capacity in IPM Solutions) under agreement 688-A-00-10-00015-00. Additional support was provided by the Virginia Tech College of Architecture and Urban Studies and the School of Public and International Affairs. Research was carried out in collaboration with the Council for Scientific and Industrial Research - Crops Research Institute (CSIR-CRI) of Ghana, Makerere University and the National Association of Women's Organizations in Uganda, and the Institut d'Economie Rurale in Mali. Special thanks to Dr. Archileo Kaaya of Makerere University and Mrs. Peace Kyamureku of the National Association of Women Organizations in Uganda; Mrs. Aminata Doucoure of the Institut d'Economie Rurale in Mali; and Joyce Halegouah at the International Crops Research Institute in Ghana.