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 kitchen space, 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 to 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.

Figure 1: Map of a woman's kitchen space.

Figure 2: Map of the "path of the peanut".

Figure 3: Map of the "path of the pesticide".

2. Introduction

This research explores gendered aspects of participatory mapping (Firatullah, 1999). Recognizing that local people have a wealth of knowledge about their surroundings in greater detail than any outsider could process (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 (Sbgh et al. 1991) serving as Batho (2005) states, as a good 'entry point for researchers to learn about local lives and resources. Researchers take on new roles as facilitators and learners (Cornwell 1995). This method creates opportunities for women to map their spaces and priorities.

Figure 4: Map of a microscopic view of a peanut plant.

Table 1: HDI (2010) for selected countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>HDI Rank</th>
<th>HDI Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mozambique</td>
<td>128</td>
<td>0.545</td>
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<tr>
<td>Philippines</td>
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<td>0.625</td>
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<td>Ghana</td>
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<td>0.628</td>
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<tr>
<td>Mali</td>
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<td>0.617</td>
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<td>Uganda</td>
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</tbody>
</table>

3. Methods

A team composed of graduate students and faculty at Virginia Tech used mapping as a low-tech, qualitative technique, adapting 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 inequality, and illiteracy (see Table 1). 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. Kitchen space: spaces of food preparation and processing showing technology and cultural reproduction in women's hands in Mexico and Mali (Figures 22-23).
2. The "path of the pesticide" from market to its final destination reveals perceptions and practices relevant to pesticide 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 (Figures 10-11).
3. The "path of the peanut" maps showed that women were more aware of mold and bitterness associated with aflatoxins than men (Figure 10-11).
4. Solos maps in Bolivia signaled the need to consider women's access to pasture land in conservation agriculture (Figure 25). The "path of the pestles" 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).
5. Women mapping the value chain maps first drew the market and places used for pounding onions for drying and sale, a fresh 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).
6. Men mapped gendered differences in access to transportation and mobility (Figures 2, 3, and 24).
7. Men 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 designation of resources obtained from the sale of farm products at the market (Figure 13 and 15). Mapping in sea-degraded and degraded groups gave women opportunities to provide their perspectives whereas these are often obscured by men linking 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 interrupt bias but is usually necessary to move the process forward.

Figure 5: A map of a peanut plant.

Figure 6: A map of a kitchen space.

Figure 7: A map of the "path of the peanut".

Figure 8: A map of the "path of the pesticide".

Figure 9: A map of a market.

Figure 10: A map of a field of peanuts.

Figure 11: A map of a microscopic view of a peanut plant.

Figure 12: A map of a market.

Figure 13: A map of a field of peanuts.

Figure 14: A map of a microscopic view of a peanut plant.

Figure 15: A map of a kitchen space.

Figure 16: A map of a field of peanuts.

Figure 17: A map of a microscopic view of a peanut plant.

Figure 18: A map of a kitchen space.

Figure 19: A map of a market.

Figure 20: A map of a field of peanuts.

Figure 21: A map of a microscopic view of a peanut plant.

Figure 22: A map of a kitchen space.

Figure 23: A map of a field of peanuts.

Figure 24: A map of a microscopic view of a peanut plant.

Figure 25: A map of a market.

Figure 26: A map of a field of peanuts.

4. Findings & Discussion

Initial research in Mexico revealed dualities in nature/society relations through kitchen space (Christie 2004, Figures 1-4).

- 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).

- Solos maps in Bolivia signaled the need to consider women's access to pasture land in conservation agriculture (Figure 25).

- The "path of the pestles" 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 market and places used for pounding onions for drying and sale, a fresh 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).

- Men mapped 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 designation of resources obtained from the sale of farm products at the market (Figure 13 and 15). Mapping in sea-degraded and degraded groups gave women opportunities to provide their perspectives whereas these are often obscured by men linking 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 interrupt bias but is usually necessary to move the process forward.

5. Conclusion

Participatory mapping engages research subjects in new and exciting ways that allow them to contribute to their ideas and enjoy what can otherwise be a tedious, boring interview session (Figures 19 and 25).