WOMEN’S VIEWPOINT ON
AGRICULTURAL TECHNOLOGICAL OPTIONS
PROMOTED BY SFDP SONG DA

M & E report

by

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1.1 Ecologically favorable technologies

Generally, in both the surveys conducted in 1999 and 2000, women workload increased through adoption of ecologically favorable technologies, according to the opinions of 60% and 72% of female respondents in Yen Chau and Tua Chua respectively. Consultancy report No 20 mentions that workload increases for women and men seem fairly balanced. To further explore the situation we can take a closer look at individual technologies regarding the relationship between workload increase and adoption rate in both districts. For a better understanding of women attitudes towards each of them, we will also consider the technologies in relation to their specific concerns. Comparisons between Yen Chau and Tua Chua will also be made.

a. Maize and bean intercropping

In the 1999 survey, 33 percent of women in Yen Chau and 59 in Tua Chua stated an increase in their workload. Not many women in Yen Chau thought this technology gives them more work, most responded that workload remains the same. However, the adoption rate then was only 11 percent. Given the fact that there has existed a local tradition to plant Nho Nhe bean together with maize for soil improvement, this indicated lack of interest from women, who are closest to the upland field.

It was almost the other way around in Tua Chua. Most women stated higher workload with the adoption of this technology but as many as 60% of the households said they applied it. This might be explained by the fact that there is a greater scarcity (or lack of diversity) of vegetables and vegetable growing land in Tua Chua, especially on higher elevations where H'mong people dwell, than in Yen Chau. Meanwhile, products from bean, young leaves and green or dried fruits have been noted to constitute important elements to the Hmong
diet. As almost only women are concerned with ensuring a certain level of nutrition for the family's diet, the high adoption level in Tua Chua could be attributed to this interest from the women viewpoint.

Data in the 2000 survey show significantly higher adoption rate in both Yen Chau and Tua Chua (42% and 73% vs. 11% and 60% in Yen Chau and Tua Chua respectively). With the sample in 2000 having different size and informants from the previous survey, it is difficult to conclude that this is a development over the years. However, these data correspond to the above observations about higher interest from women in Tua Chua.

One problem is when the second maize crop is introduced as an economically favorable technology, it could prevent women from applying this technology for beans cannot mature within one maize crop and thus would have to be removed to make room for the second maize crop. This would reduce a potential source of protein, which is of particular importance to H'mong women as pointed out in the previous paragraph.

b. Hedgerow

Eventhough adoption rates are somewhat similar with a slight drop of 5% in Yen Chau and a 12% increase in Tua Chua, survey data regarding hedgerow in 1999 and 2000 have striking differences in farmers (men and women) perception towards changes in their workload. While in 1999, nobody said workload decreased with the adoption of this technology, almost 3 thirds of farmers in general confirmed this in 2000. Tua Chua women are an exception with 50% stating workload increase and 50% stating otherwise. While this change might be explained by the fact that farmers (mainly women) see a reduction of labor input in this technology once the hedges have been established, the high adoption rate in Tua Chua (53% in 1999 and 65% in 2000) is remarkable since, as mentioned in SFDP Working paper No. 5, farmers acceptance toward this technology is generally low due to lack of obvious benefits and several other disadvantages. During interviews with H'mong women in the VDP assignment conducted in 1999 revealed that one of their foremost concerns is soil degradation, which seems in line with the higher adoption rates in Tua Chua. H'mong women probably have been active promoters of this technology. Thai women appear less concerned with the problem of soil degradation.

Another factor that could explain why hedgerow has caught on in Tua Chua is this is a good source of animal fodder. Data collected for Technology No 15 (grass for fodder) might reflect greater concerns for fodders among H'mong households: while almost no Thai household interviewed are trying out grass for fodder, more than half of H'mong households do. This factor could be of beneficial impacts on women since their children could stall feeding the cattle instead of spending a lot of time on herding them, thus having more opportunities to help them with household chores.

c. Micro-terraces

In the 1999 survey, more men and women in Tua chua stated workload increase as regards this technology (about 80% of both men and women as compared with 38% of men and 50% of women in Yen Chau). Data collected in the 2000 survey show that all Yen Chau women (100%) perceive this change in their workload through its adoption. Nevertheless, adoption rates in both years reveal much higher acceptance in Tua Chua than in Yen Chau though in Tua Chua it went down to 51% in 2000 from 80% in 1999.

This technology falls into the land clearing and ploughing category of work in which men share most with women in comparison to other production stages, thus the high workload requirements would not be shouldered by women alone if it is adopted. However, potential increase in weed pressure could pose a problem to women, who are more concerned with weeding.

d. IPM

The relevance of IPM as a cost reduction approach for pest management apparently applies to both men an women, e.g. both men and women should be interested in bringing down the cost of production. That explains why IPM seem to catch on more in Yen Chau where farmers are better off and tend to make high inputs in fertilisers and pesticides eventhough most men and women are of the same opinions that their workload increases.

Adoption of this technology in Tua Chua, on the contrary, is not so high (recording 20% in both years), which could be accounted for by the fact that low inputs in chemical fertilisers and pesticides there would make it difficult for farmers to perceive obvious financial benefits. However, it should be noted that Tua Chua farmers, especially women, have growing concerns over pest and weed problems and many have started to use
pesticides and herbicides.

Management knowledge to be promoted in IPM classes includes fertiliser application management and variety comparisons and selection (Pg 33, SFDP Working Paper No. 5 - Technical Agriculture and Agro-Forestry Options for Sustainable Development promoted by SFDP in the Song Da watershed). This has direct implications on the involvement of women since they are solely responsible for maintaining variety quality and diversity by selecting and keeping seeds from the previous harvest (Pg 19, Consultancy report No 6 - Gender Issues in the Social Forestry Development Project Song Da - Findings and Recommendations). Having said this, one obstacle of IPM to being accepted by women is their intensive labor and time requirements (100% of Tua Chua men and women stated an increase in workload during the 2000 survey), which could be an additional burden for women, who are already overloaded with production and household work. Therefore, it might have difficulties in competing with options like spraying once chemicals become more financially accessible.

e. Improved mixed garden

A woman's home garden is an area of diversified production, depending on the women's perception of what is needed for the household, which might contain greens for the family, fruits, various foods for livestock, sugarcane, garlic, onion and other vegetables. The garden seems to be entirely the women's responsibility, and women are the main decision makers as to what should be grown in it (Pg 19, Consultancy report No 6 - Gender Issues in the Social Forestry Development Project Song Da - Findings and Recommendations). In the 2000 survey, the adoption rate of this technology recorded higher in both Yen Chau and Tua Chua (58% and 56% respectively) though almost every woman perceives an increase in workload through adopting it. This could be attributed to the interest from women in improving their mixed garden for nutritional purposes, especially in Tua Chua.

Besides, there could be great interest in fruit tree development for sale from women both in Yen Chau and Tua Chua. During the Gender in VDP assignment in 1999, the gender expert contracted for this assignment noted that Yen Chau women were particularly excited about the regular, though small, income they could get from their fruit garden, especially banana. But they complained a lot about mango and litchi diseases. Probably, if more emphasis were laid on these specific concerns, farmers acceptance could even be higher. In Tua Chua, the prospects for income from fruit sale at present is negligible and there are hardly any fruit gardens of considerable scale. But the improvement of existing fruit trees around the house could be of interest to farmers in general and women in particular who are often seen to bring whatever kinds of fruits they could to the Sunday district market eventhough sometimes the fruits fetch almost nothing.

In a word, this technology could generate the much needed benefits for women but at the same time is very labor consuming, which is an obstacle as they do not get much help from men in this regard.

To sum up, significant workload increase that almost all these technologies entail could cause overburdening for women, who are practically more involved than men in most fields. Given their higher workload requirements and lack of obvious benefits in yield gains, one might conclude that technologically favorable technologies are not of considerable interest to farmers given the current demand for short-term sufficient food supply. However, they could possess other attractions once the concerns of women are taken into account, such as:

- These technologies could, besides ecological benefits, provide women with benefits very important for them to ensure household nutrition and additional incomes such as vegetables or small amounts of fruits for regular sale (banana). Problem is, on account of their small market value, these benefits are often overlooked by extension, which generally is more concerned with products of high food and market values.
- As women are closer to the field, they might be the first ones to identify problems with soil quality and could be motivated to try ways for improvements.
- If women specific concerns, like fruit tree diseases, were better targeted the acceptance level could probably be higher.
- Lastly, the higher acceptance toward these technologies in Tua Chua also shows that farmers in general and women in particular seem to have perceived the decline of soil quality in the area.

1.2. Economically favorable technologies

Similar to ecologically favorable technologies, data from both surveys show a significantly higher number of women in Tua Chua find greater workload through adoption of these technologies than women in Yen Chau. This could be accounted for by the more advantageous topographical features of Yen Chau. However,
workload increase appear equally shared between men and women in both district. Exceptions are new fish raising method and grass for fodder. Apart from the issue of workload, following paragraphs include analysis into the other matters of relevance to women.

**a. Improved maize**

Both 1999 and 2000 data show high acceptance level in both districts (86% and 83% in Yen Chau and Tua Chua respectively in 1999 and 92% and 77% in 2000) Opinions seem to be the same from both men and women in each district regarding workload. Notable is that about twice as many women in Tua Chua (as much as men) perceive higher workload than in Yen Chau.

As one of the most important cash crops in both districts, maize seems to be a major concern of both women and men. Different varieties have been recommended for the 2 districts: LVN10 and bioseed for Yen Chau and TSB2 and bioseed for Tua Chua. While bioseed shows high incidence of post ripening pest damage and taste incomparable to local varieties, the other two varieties seem to meet criteria especially important to women: they have good taste, high yield and pest resistance.

**b. Second maize crop**

Wild legumes in the harvested maize fields are weeded out for the second crop, thus hindering the intercropping of maize and beans. This means that, apart from posing a long-term environmental threat to the area where 2 maize crops are practiced, the technology prevents women from having an important additional supply of greens for the family meals.

**c. Improved upland rice**

Improved upland rice is apparently not very appealing to mountainous farmers, women or men, as an option to gain higher yield. People are generally not knowledgable about it. The adoption rate is also neglectible: almost no farmers in either district have applied this method. This could partly be attributed, apart from very high labor requirements and low yield, to the importance of taste for local people and the locally specific soil conditions.

**d. Fertilizer use on upland**

Obviously high workload reported by both men and women in relation to this technology against the relatively high adoption rate in Yen Chau (59% in 1999 and 81% in 2000) might suggest that Yen Chau farmers, men and women, are increasingly more concerned about upland soil fertility. They seem to be now more aware of these problems than in the past when yield increase resulted from new variety application hid the decline in soil fertility from being felt.

The situation is a little difference in Tua Chua. In both surveys, few households mentioned that they adopted this technology (40% in 1999 and 6% in 2000). For one reason, this technology must be extremely labor demanding for men and women in Tua Chua have unanimously stated in both the 1999 and 2000 surveys that their workload would increase if they applied fertiliser. The other reason is somewhat socio-cultural. As mentioned earlier, women in Tua Chua are especially worried about their soil conditions and seem interested in being informed of ways to solve this problem. Given the cash income difference in Yen Chau and Tua Chua, Yen Chau farmers are more likely to invest some cash in chemical fertilisers while Tua Chua farmers would most probably hesitate to do so. A good solution for them would be organic fertiliser application. What makes it more difficult is H'mong people attitude towards animal manure. Mrs. To, a H'mong woman in Thon 1, Sinh Phinh, Tua Chua said she had seen with her own eyes the apparently good impacts of animal manure application on several fields of Thai people in Muong Bang and she knew she could have similar results if she did the same to her fields. The problem, according to her, is that H'mong people think it unclean to apply animal manures to any crops they are going to consume.

An additional problem is definitely the distance and steepness of the upland fields, which hinder any attempts to carry manures from afar given the already very strained workload for women working on these fields. Therefore, the introduced fertilisation technology should be adapted in a way to make it less costly, less labor demanding and more sensitive to local cultural perceptions.

**e. Improved paddy**

It could be seen that paddy is an area of great interest for both men and women for its being a staple crop and
an important element of food security. Men and women in both districts seem to have similar opinions about workload increase (about half of them, except that in the 2000 survey, no farmers in Tua Chua were very clear about it) resulted from this technology. However, while most families in Yen Chau have applied it, none in Tua Chua do. This could be explained by the fact that paddy field is much scarcer in Tua Chua. Besides, this might be related to the level of fertiliser use when applying new varieties, which require considerable fertiliser inputs. As not much fertiliser is applied in Tua Chua, farmers would not see more gains with the new variety than the local one and it is therefore not surprising that their acceptance level is low.

**f. Winter crop**

Winter crop might include potatoes, vegetable or maize. As the third crop of a year, this is most likely to cause considerable workload increase. Besides, this crop depend heavily on the weather conditions and it is very risky to make inputs in this extra crop. Potatoes are not traditionally part of the local diet in both districts and have been noted to be difficult to promote, especially in Tua Chua, where market opportunities are limited. Several vegetable species could be of interest for women but the application scale is not remarkable.

**g. Improved vegetable seeds**

As mentioned above, vegetables are very important to women. However, data from both surveys show that not many households apply improved vegetable seeds. There are several reasons that might explain this. First of all, this might be due to the more intensive care that the new variety requires from women who are most of the time working on the upland fields. Secondly, as regards day-to-day meals of farmers, vegetable availability is more important than yield and women would rather make use of marginal farming land to keep some scattered local vegetables, which are more suitable to such cultivating conditions, rather than investing in concentrated planting. Thai women are also known to use a lot of the forest leaves and vegetables their children or they themselves pick from the forests. Thirdly, local vegetable varieties often have very distinct taste that are very much preferred by local people and the new vegetables might not have this quality. Forthly, if any, vegetables cannot yet be sold in large quantities for the market for vegetables in both Yen Chau and Tua Chua, though existing, is small (mainly in the district town centre). In a word, investment in improved vegetables seed, given all these considerations, does not seem to be worthwhile for women.

**h. Improved fruit trees**

The introduction of new varieties of fruits or grafting techniques, while having potentials in increasing the household income, might have several disadvantages. First, it means an additional production activity that requires a lot of time, labor and fertiliser inputs. Second, while there is no available storage facilities, the market for fruits are not yet developed. Therefore, it might create a double burden for women, who take most care of the garden as discussed in previous paragraphs, of having to work a lot more harder and market the products where it is difficult to do so.

**i. New fish raising method**

The data collected in the 1999 survey are interesting: while opinions of men are close in both districts, Yen Chau and Tua Chua women have totally different views: 100% Yen Chau women stated a workload increase while 100% of Tua Chua women said workload remains stable. The adoption rate, however, is similarly low in both districts (about 1 forth of the interviewees). This is easily understandable in Tua Chua where there is no long held tradition in fish raising among H'mong farmers, very few fish ponds could be found in Tua chua, even at lower elevations. That's why, it is imaginable that H'mong women would not be very interested in this technology. This rings true as well with the data collected in 2000 eventhough there was a big difference in H'mong farmers' answers between the 2 years. All the men interviewed in 2000 mentioned workload increase and all women said they did not know about this technology.

The situation for Thai women is different. For generations, a fish pond has been very important to the Thai household farming system. Fish contribute significantly to their diet and Thai women are apparently very much involved in this activity. While men are more concerned with digging the pond or mending it in case of flood or other damage and catching the fish for consumption, women are mainly in charge of feeding the fish and taking sanitary care of the pond. Thus it would be no surprise if women are eager to learn better ways of making these tasks more efficient. Anyhow, higher workload requirements of this technology (almost 100% of Yen Chau women stated workload increase) might have prevented it from being widely accepted as an alternative to the traditional way in Yen Chau. (25% and 31% of households confirmed adoption of this method in 1999 and 2000 surveys respectively).

**k. Grass for fodder**
Fodder grass could be those species grown in hedgerows, around ponds for fish and as complete cover. There is not much interest from farmers in Yen Chau, which corresponds to their low interest in hedgerow promotion. Almost no households in Yen Chau have adopted this and 100% of men and 1 third of women did not know about this technology when asked in 1999. In 2000, everyone stated they knew it but 100% of men said workload decreases and 100% of women said it increases with the adoption of the technology. This could either be explained that women are mainly involved, if at all, in trying out the method or Yen Chau farmers are altogether not knowledgeable about it.

Similar to their relatively high interest in hedgerow promotion, quite a few Tua Chua farmers have taken on this method, as confirmed by the results of the 2 surveys (see annex). Both men and women are of the opinions that it requires a lot more work but the adoption rate is considerable (50% in 1999 and 39% in 2000). However, it should be noted that, given the absence of fish ponds and large grazing areas in Tua Chua, fodder species inclusion in hedgerows is more appropriate. Besides, once the hedges have been well established, workload requirements will be reduced as the only extra work then is to cut and carry the fodder leaves and branches. The one worrying fact is that these hedges could be easily damaged by grazing and it is not possible to establish them by planting fodder species without proper internal grazing regulations.

II. Impacts on women situation and their role in implementation

The impacts of these technologies on women situation could be looked at from three aspects:

- Whether these technologies have been introduced to women through training or other dissemination channels, making them more knowledgeable.
- Whether women make use of them to better their conditions,
- Whether they have increased women workload considerably.

It is commonly said that men attend the training, women do the work, which results in wrong application of technologies. The survey data show that the situation might be more positive. In both districts, not much fewer women participate in training courses on these technologies than men (on average 28% female and 33% male interviewees) though it seems more women in Tua Chua are given training (36.6% as compared with 20% in Yen Chau). Another positive observation from the data collected in both Yen Chau and Tua Chua is that the number of women who know these technologies is twice as many as the number of women trained. However, it remains unclear how much they know about the technologies. Therefore, one cannot conclude that unofficial dissemination channels other than training are effective in improving women knowledge.

Particularly popular methods among both men and women are improved maize, second maize crop, hedgerows, micro terraces in Tua Chua and improved maize and improved paddy in Yen Chau. Some figures collected in 1999 are convincing, e.g. 100% of female respondent in Tua Chua know about hedgerows; almost half of the female respondents in Yen Chau know about hedgerows and IPM. Similarly with ecologically favourable technologies, almost all female respondents in both Yen Chau and Tua Chua know about improved maize; many in Yen Chau know about application of fertiliser use on upland, and improved paddy; many in Tua Chua know about second maize crop, winter crop, grass for fodder. It is undeniable that women are presently informed of more options to either improve their soil or their crop yield than in the past when these technologies had not been introduced to their region. Even though the adoption rate varies between individual technologies due to various factors, women now have different choices at their disposal to deal with their specific problems.

It could also be noted that, though farmer acceptance towards a certain technology depends on many factors, training for women does make a difference. Activities that are adopted most by farmers are those for which more women are given training. Following are several examples (1999 survey results): 45% of female respondents in Yen Chau and 69% in Tua Chua have attended training on improved maize and this technology recorded over 80% in both districts. 86% of female respondents in Tua Chua attended training on second maize crop and the acceptance level there is 87% while in Yen Chau, with 19% of female respondents getting training, it is only 14%. For winter crop, the ratio in Yen Chau is 6% and 34% and in Tua Chua is 24% and 63% respectively. For grass for fodder, the ratio in Yen Chau is 6% and 2% while in Tua Chua it is 45% and 50%.

Whether women actually use these new technologies to improve their conditions and whether the technologies might increase their workload are related but not necessarily reciprocal as pointed out in the first chapter. In general, the majority of women would find more work if they want to adopt these new methods. Still, the adoption rate for several technologies is relatively high, e.g. intercropping beans with maize and
hedgerow in Tua Chua, IPM in Yen Chau and improved maize in both Yen Chau and Tua Chua. This indicates that women find it, together with men, necessary to make extra labour inputs in certain areas. However, the adoption of too many new methods with high workload requirements such as fertilizer use on upland, hedgerow, micro-terraces at the same time might lead to excessive pressure on women. They must be well informed (or trained in other words) so that they could decide on the proper combination of technologies with different levels of workload requirement and avoid overloading themselves and the household labor resource as a whole.

According to Luibrand (consultancy report 20), it remains unclear if project activities alone has contributed to improvements in economic life reported by respondents in the survey (about 2 thirds of men and women in Yen Chau and 1 third of men and women in Tua Chua). However, 50% of the farmers reported yield increase due to adoption of new methods. And as the yield increases took place in important crops covering large areas, they are likely to increase total production substantially. Given that farmers strategy livelihood is strongly based on food security, this is an important indicator showing the positive impacts of the methods employed. As an integral part of the household, women, while having to work harder than before, do benefit from this gain together with other household members.

III. Conclusions

To define which technologies are most relevant for women, various factors have to be taken into account. Workload is an important factor given that women already work extensively both in housework and production. But what is more important is whether a certain technology really address women's particular concerns, which might be similar to those of men or very different in certain cases. Besides, as farmers themselves, women would certainly consider the returns of their inputs in new initiatives. And whether the returns are rewarding enough for them could be determined from both economic or consumption/utilization values. While economic values is more easy to rate with common calculations, the latter could be very locally and ethnically specific. It might relate to taste, cultural taboos or other things.

Following is a list of technologies that currently seem most relevant to women in each district:

- In Yen Chau: Improved maize, improved paddy, improved fruit garden, new fish raising method (with better disease control), IPM.
- In Tua Chua: Improved maize, second maize crop, maize and bean intercropping, grass for fodder.

Nevertheless, as the above list is not static and women's choices may differ from those of men and their viewpoint on their labour capacity might differ from men's view, it is paramount to involve women in the planning and decision making process at each step, starting with VDP (see also report Gender Issues in Village Development Planning).

As major actors in agricultural production, women have an important role in disseminating and absorbing the new initiatives once these initiatives are proven to be beneficial. Training for women, either together with men or separately, is essential in making sure that women can properly participate in the implementation.

Finally, the introduction of new technical agricultural options has generally had positive impacts on women in both districts. Their knowledge base has obviously improved in a more diversified way and the adoption of the new technologies has brought about greater food security, which is a major concerns of farmers, women or men. Gender segregated analysis of the impacts on their situation should continue in the future.

Annex: Data collected from the household surveys in 1999 and 2000

1. Ecologically favorable technologies

Note: Figures in the Workload Column go in the order of: Increase - Decrease - Stable - Don't know
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<thead>
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<th>Knowledge</th>
<th>Training</th>
<th>Workload</th>
<th>Adoption</th>
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### 2. Economically favorable technologies

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<th>Tua Chua</th>
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