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GENDER, SCIENCE AND TECHNOLOGY

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GENDER AND SUSTAINABLE AGRICULTURAL DEVELOPMENT: SELECTED ISSUES IN TECHNOLOGY DEVELOPMENT AND TRANSFER

Joseph Seepersad

INTRODUCTION

Sustainable agricultural development has justifiably emerged as a major concern of Governments of the industrialised and less industrialised countries of the world. Most Caribbean islands are especially vulnerable to environmental degradation given their small sizes, mountainous terrain, intense rainfall and patterns of agricultural use. While the drive towards sustainable development must address fundamental socio-economic and policy issues, the technology dimension, the focus of this paper, must of course prove equal to the task.

It is now generally well-recognised that women are involved in all aspects of agricultural production and marketing. There is, too, a growing realisation that technology development and transfer efforts should be based on sound gender analyses, not only on grounds of social value but also in the interest of the efficiency of these activities. There is little doubt, however, that more needs to be done.

This paper, therefore, attempts to bring together the two major issues just mentioned, that must be squarely faced by Caribbean countries in looking to the future - that is, the issue of sustainable agricultural development and the gender issue. The aim really is to "open up" the topics for discussion and further illumination rather than to present the final word on these matters.

The paper first revisits the need for gender analyses, raises an important caveat, analyses current approaches, and finally, cites examples of some initiatives which have attempted to seriously grapple with gender issues.

ISSUES FROM RARECC 1994

As a starting point, the paper briefly follows up on some points and observations that emerged from a panel discussion on Gender Issues at the Ninth Regional Meeting of the Agricultural Research and Extension Coordinating Committee (RARECC) held in Dominica in late January 1994. RARECC is held roughly every 18 months under the auspices of the CARDI/UWI Agricultural Research and Extension Project (AREP) funded by USAID. It provides a forum for officials and farmers from member countries to review and influence future direction of the project, but it also discusses other matters of relevance to the

sub-region. The project has a mandate for gender issues and the panel discussion was convened to assist in that regard. Panelists included Dr. G. Sirju-Charran and Mr. D. Dolly of UWI, St. Augustine; Ms. Rufina Jean-Paul of the Ministry of Agriculture, St. Lucia; and Ms. Jennifer Maynard of IICA (Antigua).

This is a good place to start, since participants comprised both researchers (Technology Adaptation Specialists) and Extensionists, the technology **transfer** specialists from UWI, CARDI and Ministries of Agriculture of the Eastern Caribbean countries. Farmers have always been regarded as key individuals at these meetings and thus the organisers sponsored their participation. Unfortunately, though, too few women were present at most of the sessions.

The main business of the meeting was to address technology development and transfer issues albeit in the context of a specific project. Although the time allowed for the panel presentation and ensuing discussions was too short to allow for satisfactory exploration of some of the issues, it nevertheless seemed to me that this was an opportune occasion to assess current perceptions on gender related matters. Some of the issues which surfaced are discussed in the following sections.

"Selling" the need for gender analyses

The notion still seemed to exist that saying that the need for extensionists and researchers to address gender issues invariably implies discrimination against women by both groups. Therefore, the reaction from the audiences, that are usually largely male, tends to be that they work with all farmers be they male or female and thus, as far as they are concerned, they do not have a "gender problem". Of course, for the converted, this is easily recognised as the classic symptom of "gender blindness", which is *de facto* discrimination, and much energy may be expended in asserting that point. Often the proceedings get mired at that stage with arguments and counter-arguments hindering enough airing of other powerful reasons for gender analyses. One such reason was offered by one of the panelists who exhorted her audience to get more deeply involved in gender matters since, if they do not, the work will be left to others who, although well intentioned, lack enough knowledge/insight into agricultural matters.

The phenomenon of selective perception well-known to communication specialists must also be considered. To oversimplify, selective perception implies that if persons are not sensitised to certain elements in their environment, they are likely to overlook them. Thus, the more seriously they treat with gender issues, the more likely are they to discern such issues when these are

encountered. This can work both ways; evidence will be collected that could either **support** or **refute** claims on either side.

The need for gender analyses will also be more readily appreciated if we bring to the fore, the point that the better one knows the users of a technology, the better can **appropriate** technology be developed and **transferred** to those users. This is a general principle that underpins Farming Systems Research (FSR). It can be argued that gender analysis gives greater sophistication to that exercise. Indeed, FSR holds that farm-household linkages are important so that in theory, it ought to address some of the gender issues related to technology development and transfer. For several reasons though, these issues are not properly treated and thus this aspect needs to be revisited:

Applying gender theory to specific contexts

The question as to what extent generalisations can be validly applied to certain specific contexts was also raised. Some participants felt that extrapolations from experience, in other "Third World" countries are many times not valid since, they claim, with some justification in my view, that our societies are different.

Care must also be taken in how theory is used to explain what has been observed. One panelist cited the case of women in agriculture in Antigua as clear evidence of how women, because of their lack of access to power, are discriminated against in the Caribbean. In Antigua, women's wages are usually lower than those paid to men even when women's jobs are more skilled. In discussions after the session, one of the Antiguan participants pointed to a probable underlying cause for this state of affairs. He stated that historically sugar cane cultivation was the main agricultural activity and that men usually performed the "heavier" jobs requiring greater physical effort. They were thus paid more and this practice seemed to have been transferred to the current scenario even though sugar cane is no longer cultivated. A participant from Dominica pointed out that in the banana industry the field packers, who are mainly women, enjoy some of the highest wages. While these explanations may not completely invalidate the use of feminist theory to analyse the situation, a clearer understanding of the different factors that come into play provides a better basis for dealing with issues.

A CAVEAT - THE HIGH COST OF TECHNOLOGY DEVELOPMENT

The general tenor of the literature on women in agriculture is that the **technology that has been developed has not been "gender neutral"** but has

been biased towards men. A user orientation, therefore, demands a greater focus on the specific characteristics of the users which in many cases may involve a substantial percentage of women. While, of course, this is a desirable ideal, there are a number of "practical" reasons why such a course of action could many times be difficult to carry to its logical conclusion. The primary one is the cost of technology development.

The cost of research into developing one product such as a pesticide runs usually into tens of millions of dollars. Therefore, to ensure that such a product is economically viable, a manufacturer will focus on crops, for example, that are extensively grown, and would aim at a broad, rather than a narrow band of application; thus, focussing too closely on specific characteristics could militate against the profitability of the product. It should be remembered too, that there could be as many variations in characteristics such as height and physical strength within sexes as between them. Is this therefore a case for the neutrality of technology as far as possible?

The above discussion points too, to the significant role adaptive research can play in modifying/adapting standard research recommendations to suit the "situation", defined in the broadest terms, of specific audiences. But adaptive research such as FSR conducted by CARDI is costly and given the present economic outlook such programmes are likely to contract rather than expand in the foreseeable future. Indeed, a World Bank team that recently examined the cost effectiveness of research and extension in the Caribbean concluded that those were quite high compared to other countries. Although the report is still being debated, the findings are likely to hold considerable sway with the traditional donors and there is little doubt that soon external funding will be less available. Clearly, therefore, NGOs and self-financed activities will need to fill the vacuum and indeed, chart new directions, but more will be said of this later.

OTHER CONSIDERATIONS RE SPECIFICITY OF TECHNOLOGIES

Farmers operate in a wide range of conditions - soil type, topography, weather conditions, susceptibility to flooding/drought and so on. There is a range too in their education levels, skills and abilities. They also operate in varying social, cultural and economic milieu. Researchers, obviously cannot aim at tailoring technologies to the entire range. Some progress has already been made in developing broad typologies which in each case would encompass certain key common operational elements. Thus, agriculture is now characterised as (1) Green Revolution or Industrial Agriculture and (2) CDR Agriculture, i.e. agriculture that is carried out in complex, diverse, and risk-prone environments. A different type of technology would be needed for CDR as

compared to Industrial Agriculture.

While the trend to distinguish environments is helpful, technologies may still not closely fit the situations of many individuals. Even though that is the case, the intended user may not necessarily reject the technology and thus not benefit from it. Diffusion theorists (e.g. Rogers, 1983) point to a number of ways in which farmers deal with "tech packs" (technology packages). They tend to adopt standard recommendations **selectively**, they may adopt them in a **step-wise** fashion, they may partially adopt, or they may **adapt** considerably the technology. Seepersad (1994) has given several examples of such practices in examining fertilizer uses among farmers in Trinidad.

He also noted in a study of hillside farming in Trinidad the tendency for farmers to use innovative ways to conserve the soil (Seepersad, in press). Although many accepted the need to carry out certain recommended measures across the slope only a small proportion used contour banks and contour drains, both of which have a high labour requirement. Rather, they tended to place logs or debris across the slope, which though not as effective, require considerably less time and effort than contour banks/drains. The point to be derived from all this is that **even though technologies may not have been developed to meet the specific circumstances of women farmers, they may not have necessarily completely lost out on them.** This, however, is not to excuse the lack of attention to the specific circumstances of women farmers.

APPROACHES

I have already adverted to the fact that Farming Systems Research and its variants provide a framework for consideration of gender issues in technology adaptation and transfer. FSR has several features that are laudable: it is holistic, and therefore multi-disciplinary in scope, it is participatory and "bottom up" in style since it attempts to examine problems and devise solutions from viewpoints of farmers; and as a result, it seeks to incorporate indigenous knowledge into the process. However, not all these elements, including gender issues, have been adequately incorporated into earlier projects. A big part of this problem may have been due to uncertainty as to how to do it but current literature (e.g. Saito and Spurling, 1992; Feldstein *et al.*, 1989) as well as a great deal of accumulated experience and lessons learned provide fairly clear guidelines. Much progress has been made over the years and CARDI's Sheep Production and Marketing (CSP/M) Project funded by CIDA has been trying hard to incorporate gender and social issues (Rajack and Hosein, 1992). This project now makes provision for full-time specialist in gender and social issues.

FSR was conceptualised initially as a methodology for the "small" or low-resource farmer. Even though it has been around for at least a decade or so, whether or not it has entered into the **mainstream** of agricultural technology generation and transfer is still a moot question. The initial impetus for FSR came from USAID whose support for this type of research has declined over the years. The torch for this type of research is now being carried by just a few externally funded projects as well as NGOs whose thrusts into this area have been steadily increasing over the last few years. It will be remiss of me, however, not to mention the work of ICRISAT (the International Centre for Research in the Semi-Arid Tropics) and possibly other such institutions who seem to have taken on board Participatory Action Research (PAR).

FSR has served as the base for other approaches such as PAR just mentioned and "Agro-Ecological Approaches" (Altieri, 1992) which are being used largely by NGOs worldwide. With the rising concern for sustainable development, new life has been breathed into such activities. To focus a bit on the agro-ecological approach, Altieri (1992, p. 34) explained as follows:

"... they go beyond the mere rhetoric of sustainability to concentrate on promoting technologies which are sensitive to the complexity of local farming systems. Many build on traditional farming knowledge, combining it with elements of modern agricultural science to boost production while striving to achieve food security, biological stability, resource conservation and equity."

Altieri also touched on one of the problems in promoting Low-Input Sustainable Agriculture, popularly known as LISA -- the question of the profitability of such alternatives. In Belize, some NGOs involved in promoting the LISA system among small farmers reported that they sought to mechanise as much as possible, reflecting a tendency to want to modernise, even when the approach was not sustainable (Post, Zantingh and Chan, 1992).

Not only must farmers be convinced, but politicians and others need to be assured that LISA or other such systems is not a backward step. A few years ago, the Prime Minister of one country accused UWI of not taking the region's farmers out of the "cutlass and hoe mentality". Now, with Caribbean banana-producing countries facing threats from Latin American producers using high levels of "modern" technologies, the task ahead becomes all the more challenging. There is no question, therefore, that dilemmas abound.

While I have just dealt with some general issues regarding methodology, I shall now turn quite briefly to a consideration of how gender issues could specifically be addressed. First, the **what**. CARDI's CSP/M project, with a focus on small livestock, seems to be the type of activity that is suited to women since it can be conducted close to the home and it can generate a good level of income even on small plots. Seasonings and herbs are also good alternatives as they can be grown intensively and give a reasonable income. In Paramin, a hillside area well-known for its seasonings, a women's group has been formed to process the seasonings thus adding much value to the crops.

On a slightly different vein, the use of multipurpose trees (MPTs) and agro-forestry plays a significant role in sustainable agricultural development. Here again, research and extension must be sensitive to the circumstances of women, for example, field trials could be conducted as close as possible to homes rather than in locations not easily accessible to women.

CONCLUSION

The paper has focused more on integrated approaches to technology development and transfer and less on research and extension individually. There are many issues in each case that still need to be unravelled as we move into the 20th century. Hopefully, the paper has provided some beacons to help light the way.

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SUB-THEME 5:
NETWORKING AMONG SCIENTISTS