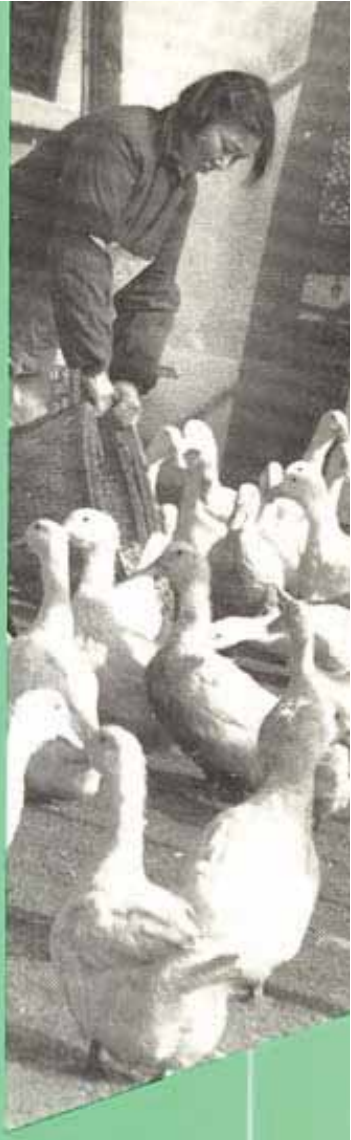
Agricultural extension and farm women in the 1980s



Food and Agriculture Organization of the United Nations

Agricultural extension and farm women in the 1980s

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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Foreword

The United Nations declared Women's Decade (1975 to 1985) as a landmark in the struggle for the equality and participation of women in development throughout the world. For FAO, that worldwide concern for women in development, particularly in agriculture and rural development, was highlighted at the World Conference on Agrarian Reform and Rural Development held in Rome, Italy, in July 1979. Various fora on the UN Women's Decade and the World Conference on Agrarian Reform and Rural Development identified agricultural extension services in developing countries as one of the policy instruments and operational means of improving rural women's access to and beneficial participation in agricultural and rural development programmes.

Recognizing from the estimates of the United Nations Regional Economic Commissions as well as from FAO data that women's agricultural work constitutes about 40 percent of the labour force in Latin America and between 60 and 80 percent in both Asia and Africa, the Global Consultation on Agricultural Extension, held in Rome in December 1989, examined the gender issue in agricultural extension work. The Consultation data on the gender issue from 115 countries and more than 20 case-studies indicate that, in fact, toward the end of the 1980s rural women's access to agricultural extension services was still very poor and the number of women extension personnel was also extremely low.

This FAO publication on *Agricultural extension and farm women in the 1980s* is an in-depth analysis and

comprehensive presentation of the status of women in agricultural extension work in the 1980s; it uses the 1989 FAO survey data on national agricultural extension approaches, collected for the Global Consultation on Agricultural Extension. The publication has been prepared for general users: agricultural and rural development policy-makers, agricultural extension personnel, researchers on extension and women in development, as well as benefactors of women in development programmes in general and in agricultural extension in particular. Hence, it systematically presents women farmers as extension clientele and women's access to agricultural extension; women as extension personnel; and some ideas on designing gender-sensitive extension programmes for the 1990s.

Under the guidance and sponsorship of FAO's Agricultural Education and Extension Service (ESHE), Ms Vicki L. Wilde, a freelance consultant, analysed the data and wrote this publication. Her dedication and perceptive analysis of the problems and gender issues in agricultural extension are highly appreciated. The collaboration and valuable comments of the Women in Agricultural Production and Rural Development Service (ESHW) in the preparation of this paper are gratefully acknowledged.

It is hoped that this document will serve as a benchmark for the future assessment of agricultural extension and women in development, and prove to be an useful working material for its intended users.

W.D. Maalouf
Officer-in-Charge
Human Resources, Institutions
and Agrarian Reform Division

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Introduction

WHY REACH WOMEN WITH AGRICULTURAL EXTENSION?

The contributions of both female and male farmers are substantial and essential to agricultural development; consequently, the achievement of agricultural development goals in terms of efficiency, sustainability and equity is hindered by the predominant practice of directing training and resources to men only. Thus, the challenge for extension planners is to ensure that both female and male farmers are included as extension clientele and to identify the appropriate means of directing training and technologies to them. This is important for at least three reasons. First, agricultural extension programmes that ignore women's farming roles risk low returns, inefficiency and, in the long term, failure to achieve development objectives.[1] Second, extension activities that are carried out without the participation of female farmers risk having negative impacts on women and their families.[2] On the other hand, the productivity and welfare of rural households can be maximized when both female and male farmers participate in extension activities that are relevant to their roles as agricultural producers.[3]

The role of women in agricultural development has been documented over the past several years by international development agencies, national governments and researchers alike. The weight of women's agricultural work is significant, ranging from 40 percent of agricultural labour in Latin

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[1] Berger, 1987; Carloni, 1983; Saito & Weidemann, 1990.

[2] Loukfi, 1985; Dey, 1990; Saito & Weidemann, 1990.

[3] Blumberg, 1989; Spring, 1988; Saito & Weidemann, 1990.

America to between 60 and 80 percent in both Asia and Africa.[4] While the facts show that women produce a major part of the developing world's food supply, they also show that their productivity is generally low and based on long work hours on small landholdings, with restricted access to training, technology, credit and inputs and, for the most part, using traditional and unimproved agricultural methods.[5] Closing the gap between the current productivity levels of female farmers and their potential productivity levels may be one of the most effective means of promoting agricultural development overall.

Extension programmes provide out-of-school educational services for rural producers -farmers, foresters, fisherfolk and herders. The objective of extension training is to develop human resources so as to increase agricultural productivity and to accelerate rural development. Extension clientele are assisted in applying improved technology and managing their resources to achieve maximum production and income. Given the evidence of women's role in agriculture, it would seem logical to find them actively participating in extension.

The present situation, however, as will be shown in this document, is that agricultural extension services are geared primarily to male farmers. This is evidenced in delivery systems staffed predominantly by males; in extension methods that often preclude women's participation, e.g. the contact farmer method, requiring resources to which women have limited access; and in the segregated pattern of training topics, e.g. agricultural information for men and home economics information for women. Whereas in most developing countries women are partners in agricultural production - if not farmers in their own right - these distinctions in training delivery and information

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[4] Based on estimates from the United Nations regional economic commissions: the Economic Commission for Africa (ECA); the Economic and Social Commission for Asia and the Pacific (ESCAP); and the Economic Commission for Latin America (ECLA). The estimates are aggregates from microlevel studies that examined the full farming system, not just the measured agricultural labour force. Cited in Blumberg, 1989, p. 25. See also chart 14 of Seager, & Olson, 1986.

[5] FAO, 1985; Dey, 1984.

restrict the skills development of a substantial proportion of the agricultural labour force.

The 1989 FAO survey data show that about 5 percent of all agricultural extension resources worldwide are directed to female farmers and only 15 percent of the world's extension personnel are female. Whether by design or default, the result is a male-to-male system for transferring agricultural training, technologies and information. At best, the result is suboptimal levels of agricultural production. At worst, female farmers are handicapped in both their subsistence and income-producing agricultural activities.

One result of the extension of new technologies to men only is that women lose control over certain production processes, even those traditionally considered to be the responsibility and resource of females. They lose as well the derived income and status. Women also may experience a decline in employment opportunities as their labour is displaced by mechanization.[6]

In other instances, new farming practices have led to an increase in cash crop production. When women are excluded from learning the new practices, they often lose control over the land previously farmed by them. In addition, increased acreages or labour-intensive practices demanding more female labour often reduce women's production of other crops or their ability to engage in other income-earning activities.[7] This may increase hardship among low-income households, dependent on female food production and earning capacity, and may have negative consequences for their nutritional status.[8]

To summarize, including female farmers in extension makes sense for agricultural and rural development on a number of different levels including: (a) improving the productivity, income and status of rural women, in turn enhancing the well-being of rural households; (b) helping nations to achieve their goals pertaining to food self-sufficiency and export crop production while developing both genders of its human resource base; and (c) maximizing the utilization of scarce extension resources. Because

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[6] Ashby, 1981.

[7] Spring & Wilde, 1991.

[8] Dey, 1984; Saito & Weidemann, 1990; Holmboe-Ottesen, Mascarenhas & Wandel, 1989.

women constitute a large proportion of rural producers, especially among small farmers, they are a logical target for development services designed to increase agricultural production and expand income-producing opportunities in rural areas.

FAO, EXTENSION AND WOMEN FARMERS

Extension, education and training programmes for farmers in the developing world have been carried out with technical assistance from the Food and Agriculture Organization of the United Nations (FAO) since its creation in 1945. FAO's extension efforts contribute to agricultural development through both technology transfer and human resource development. A concept of agricultural extension widely used in FAO is "...a service or system which assists farm people, through educational procedures, in improving farm methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting the social and educational standards of rural life."[9] FAO's efforts in the field are even broader than this definition reveals. In the light of the 1979 World Conference on Agrarian Reform and Rural Development (WCARRD), FAO places a strong emphasis on reaching the rural poor, particularly smallholders, the landless, women and youth. This emphasis is critical since, on the contrary, the majority of the world's extension programmes focus on farmers who have large landholdings and other economic resources.[10]

Among resource-poor farmers, women constitute a significant proportion, whether as unpaid family workers, farm managers or agricultural wage labourers. In many areas, the fastest growing type of household among small farmers is female-headed, frequently due to men's out-migration in search of wage employment. In 1988, it was estimated that an average of 22 percent of households in Africa are *de jure* female-headed, with the percentage as high as 63 percent in some areas. The number of

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[9] FAO, 1984a.

[10] FAO, 1990c.

female-headed farms also has been on the rise in the Near East, Asia and Latin America.[11] On such farms, women alone are responsible for the productive and domestic needs of their households and often operate near or below subsistence level. Landlessness also is more prominent among female heads of household than those with male or joint heads, a trend maintained and reinforced by most agrarian reform policies.[12]

FAO's research in Africa and other regions shows that rural women share many of the same problems as do all farmers in gaining access to adequate extension services. Most particularly, their problems reflect those faced by small and poor farmers. But an additional layer of difficulties is unique to female farmers, including the diversity of agricultural activities they carry out, often working to produce both food and cash crops as well as livestock; women's overall responsibility for domestic and reproductive activities, greatly limiting their time availability; and the social-cultural factors that may hinder women's mobility and their access to training, land, credit, inputs, technology and other needed resources.

FAO has taken the lead in working with its member governments to find ways of bridging the gaps between extension services and female farmers. Examples of FAO's efforts in this field include a Governmental Consultation on Women in Food Production, held in Senegal in 1985 with participants from 18 African countries, during which there were discussions on how extension services could be made more responsive to the problems of women farmers. Also in 1985, FAO produced a film entitled *The forgotten farmers: women and food security,* which has been shown extensively around the world on national television, in policy workshops and to extension workers and women's groups. In 1986, FAO held an expert consultation in the United Republic of Tanzania on Improving Agricultural Extension for Increased Production in Africa, and an expert consultation in Cyprus with participants from 11 countries of the Near East on Extension

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[11] FAO, 1990a.

[12] FAO, 1988b.

Field-Staff Training. During both, participants spent considerable time developing ways to train more women according to their specific needs.[13]

To explore these issues further, FAO sponsored a workshop on the Effectiveness of Agricultural Extension Services in Reaching Rural Women in Africa, held in 1987 in Harare, Zimbabwe, during which research from five African nations was presented.[14] Data from the country studies in Kenya, Malawi, Sierra Leone, Zambia and Zimbabwe show pockets of progress in specific project areas. But the overall scenario is that rural women continue to face serious constraints regarding access to extension services, including: limited access to productive resources such as land, credit and inputs; the misconceptions and prejudices of key officials concerning women's roles; a lack of relevant research and extension packages; a nearly all-male staff at both national and field levels, few of whom are trained to work with rural women; and extension policies that do not explicitly identify female farmers as an important part of the target audience.

Global consultation on agricultural extension

The need to tackle the problems related to women and extension was most recently reiterated at FAO's Global Consultation on Agricultural Extension held in Rome, from 4 to 8 December 1989. The Global Consultation participants examined the concepts and policies of agricultural extension, target clientele, extension approaches, programmes and methods, extension impacts and effectiveness, human resources, and technical and financial assistance issues. Findings, conclusions and recommendations are presented in FAO's 1990 *Report of the Global Consultation on Agricultural Extension.*

Among the issues examined during the Global Consultation, female farmers were seen as integral to two of them: extension clientele and human resource development. In the keynote address it was stated that"... the major challenge for extension systems is how to serve the rural majority, the poorly

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[13] FAO, 1987.

[14] FAO, 1988a.

educated subsistence farmers, the landless living in poverty and the women and young farmers who have been long neglected by extension and other services." And, further, it was asked "...what experience can be offered in respect of the orientation required to help women farmers who are so often responsible for farming but lack the access to extension and other resources available to their male counterparts?"[15]

It is to the latter question that this paper is addressed. Overall, the need for agricultural extension training to reach female farmers is acknowledged. Recognized need, however, is insufficient. Two types of action are required: first, the policies of extension programmes must specify that an appropriate share of extension resources is directed to small farmers, and that both female and male farmers will be targeted for participation, as appropriate to their roles in agricultural development; and, second, for the field level, operational guidelines must be developed addressing the barriers between female farmers and agricultural extension.

After FAO's Global Consultation on Agricultural Extension, it was decided to further investigate the implications of the consultation findings with respect to female farmers. A starting point is to study trends with respect to women and extension and to examine programmes that successfully include women and look at why others fail to do so. The worldwide survey of agricultural extension organizations and the case-studies of specific extension programmes, both carried out for FAO's Global Consultation, provide valuable information, especially given the current paucity of sex-disaggregated data. Both the surveys and case-studies examine a wide range of extension issues that are summarized in *the Report of the Global Consultation on Agricultural Extension.* It is important to note that neither the global survey nor the cases were designed as studies on women's access to extension; thus the analysis based on these two data sources is limited. The data do allow, however, the examination of important trends. The discussion here focuses on two issues: women farmers as extension clientele and women as extension staff.

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[15] Dutia, 1989.

Survey of extension organizations

FAO's survey of extension organizations, conducted during 1988-89, was designed to collect basic data on extension personnel, clientele, programmes and financing. The survey received responses from a total of 115 countries in Africa, Asia and the Pacific, Latin America and the Caribbean, the Near East, Europe and North America, as reported in the 1990 *International Directory of Agriculture Extension Organizations* (see Appendix I for a list of the respondent countries).

Two sections of the survey requested information on women's participation in extension, one on the allocation of extension resources to various clientele groups and the other on personnel. (Ninety-seven of the 115 countries reported personnel data disaggregated by sex.)[16] The 1989 survey followed a similar survey conducted in 1980 to which 103 countries responded. (Fifty-seven countries reported sex-disaggregated data in 1980.)[17] In both cases, most of the surveys were answered by the ministries/ departments of agriculture as they usually have jurisdiction over national agricultural extension programmes. FAO has found that more than 90 percent of all extension work is carried out by a ministry or department of agriculture at the national, state or provincial level.[18]

Case-studies of extension programmes

The 24 case-studies provide a detailed look at extension programmes though for confined areas and relatively small numbers of farmers. The purpose of the studies is to help FAO examine different approaches to extension in terms of "...cost effectiveness, replicability, sustainability and their capacity to reach disadvantaged target audiences."[19] FAO chose these particular cases to study because they are extension programmes that work. Thus it is all the more important to examine whether these "success stories" include women - and why or why not.

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[16] FAO, 1990b.

[17] Swanson & Rassi, 1981.

[18] FAO, 1990b.

[19] Contado, 1990.

For each case-study, a data checklist and a descriptive report were requested. As for the global survey, case-study respondents were asked to provide sex-disaggregated data on extension clientele and personnel. Furthermore, measures of women's participation in a number of extension activities also were reported. (See Appendix II for a list of the case-study extension programmes in which the zones/regions of each country covered by the case-study are indicated. Three of the 24 case-studies were incomplete or did not report disaggregated data and, therefore, are not included in this paper.) The case-studies discussed here examine seven extension programmes in Africa, five in Asia, five in Latin America and four in the Near East. The scope and characteristics of these extension programmes vary widely: the study areas range from only 39 149 ha in Rwanda to l7 110 500 ha in Kenya, and the number of farmers trained range from only 430 in the Philippines to well over a million in Cameroon.

Following is an overview of findings from both the global survey and the case-studies in terms of women's status during the 1980s as clientele of agricultural extension programmes and as extension personnel. A comparison of the personnel data collected at the beginning and at the end of the decade is included. The implications of the findings then are discussed with respect to the barriers between female farmers and agricultural extension services. Finally, recommendations are outlined for both national and international efforts to foster gender-sensitive extension programmes for the 1990s.

Women farmers as extension clientele

THE GLOBAL PICTURE

Respondents to the global survey of extension organizations were asked to indicate how their extension resources are allocated among different clientele groups, including commercial, commodity, subsistence and women farmers. Public agricultural extension programmes ideally serve the needs of all types of farmers in a country. The results from 132 organizations from around the world are summarized in Table 1.

The global survey findings show that an average of 5 percent of all agricultural extension resources worldwide are allocated to programmes for women farmers, ranging from 9 percent in the Near East, 7 percent in Africa and 5 percent in Latin America, to 3 percent in Asia and Europe and 1 percent in North America. Unfortunately, the survey was not designed in such a way as to identify women clientele among the other categories of farmers, such as commercial, commodity or subsistence farmers. The survey listed women farmers as one inclusive category. The data do suggest, however, that most agricultural extension is directed to men.

It is also clear from the survey data that the area of extension that is traditionally available to women - home economics - is given minimal support. Home economics extension receives about 1 percent of all agricultural extension resources worldwide, ranging from a high of 9 percent in North America and 4 percent in Europe to only 2 percent in Asia and 1 percent in both Africa and the Near East.[20] One reason the percentage

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[20] The designation of home economics as a category of extension clientele is conceptually inappropriate; it is, instead, a programme area. However, as the survey was so designed, the findings are reported here.

TABLE 1

Percentage of time and resources allocated to clientele groups by extension organizations

Clientele groups	Africa *N = 38*	Asia& the Pacific *N = 28*	Europe *N=7*	Latin America *N = 39*	North America *N = 4*	Near East *N=16*	Worldwide average *N = 132*
Commercial farmers	20	36	69	42	48	31	35
Commodity producers	26	17	5	24	1	34	23
Subsistence farmers	31	28	2	18	1	14	22
Landless producers	1	4	1	2	1	5	2
Young farmers/ rural youth	10	8	7	5	16	2	7
Women farmers	7	3	3	5	1	9	5
Home economics	1	2	4	-	9	1	1
Other groups	4	2	9	4	23	4	5
Total percentage	100	100	100	100	100	100	100

Source: Table 4 of "The current status of agricultural extension worldwide", prepared by Swanson, Farmer and Bahal, in FAO, 1990c.
Note: N = number of respondent organizations; missing = 75.

is so low is that it includes only the home economics programmes of the ministries of agriculture whereas, in many countries, home economics falls under the jurisdiction of such ministries as social welfare, community development, women's affairs or others. It is unexceptional, however, to find that few resources are allocated to home economics units.[21]

To sum up, the survey findings indicate that few agricultural extension programmes reach women, either with extension appropriate to then-farming roles or with extension appropriate to their domestic and reproductive roles.

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[21] Balakrishnan, 1990.

Table 1 also reveals that less than a quarter of the world's extension resources are designated for subsistence farmers, while 2 percent is directed to landless producers and 7 percent to rural youth and young farmers. Thus, while resource-poor and subsistence farmers make up more than 75-80 percent of the world's farmers, they are allocated only, on average, about one-third of the time and resources of extension. Instead, the majority of efforts are directed to commercial farmers and commodity producers who receive an average of 58 percent of all extension.

As a matter of practice, most public extension organizations identify target clientele on the basis of land and other economic resources. It appears that technology transfer goals, particularly to the commercial farm sector, are given priority over broader rural development concerns.[22] Within this context, the challenge is not only to see that women in general are identified as clientele, but to encourage extension programmes to give increased priority to reaching small farmers. The majority of the world's agricultural producers are small farmers and the majority of female farmers have small landholdings. By targeting small farmers with extension, agricultural development could be enhanced for both women and men.

WOMEN IN THE CASE-STUDY AREAS

Agricultural extension services are necessarily oriented to agricultural producers and, most particularly, to those with control over the productive resources required for agriculture, especially land. From the national data in Table 2, which provide a backdrop for the case-study data, it is clear that women represent a significant percentage of the agricultural labour force in the case-study countries as a whole: 40 percent or more of the women are economically active in agriculture in ten of the 21 countries. If women's subsistence farming and part-time and unpaid labour in agriculture were included, the numbers would be even higher.

In Tables 3 and 4, women's access to land and their roles in farm management and decision-making are estimated by data on female farm

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[22] Swanson, Farmer & Bahal, 1990.

TABLE 2

Role of agriculture in case-study countries

Case-study countries	Percentage of national GDP in agriculture	Estimated percentage of population in agriculture	Estimated percentage of women economically active in agriculture
Africa			
Burkina Faso	45	85	47
Cameroon	22	25	40
C6te d'lvoire	36	59	41
Kenya	30	78	44
Mali	50	82	16
Rwanda	40	92	52
Senegal	22	79	45
Asia			
Bangladesh	47	**70**	7
China	31	70	46
Indonesia	26	47	30
Philippines	26	48	-
Thailand	17	63	48
Latin America			
Brazil	11	26	13
Chile	-	14	4
Colombia	20	29	3
Mexico	9	32	14
Peru	11	38	15
Near East			
Cyprus	-	22	49
Egypt	20	42	4
Turkey	18	47	54
Yemen	-	34	14

Source: FAO, 1990b.

Note: - = missing data.

TABLE 3

Size of farms and gender of farm operators in case-study areas

Case-study countries	Total no. ha covered	Large farms		Medium farms		Small farms		Percentage female operators
		No. male operators	No. female operators	No. male operators	No. female operators	No. male operators	No. female operators	
Africa								
Burkina Faso	1 000 000	210	0	14 664	0	34 705	0	0.00
Cameroon	1 000 000	21 580	0	49 936	262	76 116	400	0.45
Rwanda	39 149	0	0	6 773	1 387	21 448	4 392	17.00
Senegal	531 326	1 382	0	32 838	1 728	85 034	198 411	62.66
Asia								
Bangladesh	927 958	0	-	70 111	-	1 166 400	-	0.00
China	596 500	20 044	22 602	21 222	23 932	649 652	732 586	53.00
Indonesia	6 946 198	100 000	24 000	2 468 000	583 000	4 221 000	997 000	19.11
Philippines	229 600	0	0	0	0	92	10	9.80
Latin America								
Colombia	173 250	0	0	0	0	3110	90	2.81
Mexico	113 180	0	0	4 900	1 200	437 400	338 500	43.44
Near East								
Egypt	60 833	0	0	0	0	43 117	16 851	28.10
Yemen	636 000	222	111	894	447	21 204	10 602	33.33
Totals	12 253 994	143 438	46 713	2 669 338	611 956	6 759 278	2 298 842	23.60

Note:- = missing data.

operators and female-headed farms. Together these serve as indicators of women's status as potential clientele in the extension programmes studied.

Female-operated farms

The potential extension clientele in the case-study areas include female and male operators of large, medium and small farms. As "operators", they are assumed to be the decision-makers with respect to agriculture-related

TABLE 4

Female-headed farms in case-study areas

Case-study countries	Estimated total no. farm families in study area	Estimated no. female-headed farms in study area	Estimated percentage female-headed farms in study area
China	1 233 600	203 655	16.51
Colombia	2 550	540	21.18
Egypt	59 968	16 851	28.10
Indonesia	1 800 000	1 949	0.11
Kenya	486 450	131 771	27.09
Mexico	40 000	24 585	61.46
Philippines	132	10	7.58
Rwanda	34 000	5 780	17.00
Senegal	248 034	5 350	2.16
Yemen	27 344	958	3.50

Note: only ten of the case-studies report data on female-headed farms.

activities on their farms. The number and size of the farms run by women and men are examined in Table 3.[23] (It is important to note that Table 3 indicates the characteristics of the farmers *present* in the case-study areas, not necessarily those that are *reached* by the extension programmes studied.) Overall, Table 3 shows that the case-study areas have significantly more small farms than large and identify more male farm operators than female.

Large numbers of female operators are identified, however, in several of the case-study areas. Indeed, for the 12 case-study areas for which sex-disaggregated data are reported on farm operators, 25 percent of the 190 151 large farms are operated by women as are 19 percent of the 3 281 294

[23] Most case-studies did not define "small", "medium" and "large" farms. Those that did gave varied definitions. In general, small farms range from less than 1 to 3 ha; medium farms range from over 3 to 5 ha; and large farms range from over 5 to over 20 ha.

medium-size farms. These percentages are distorted, however, by the exceptionally high numbers of women operators in the case-study areas of China and Indonesia.

In general, female operators are found in the greatest numbers on small farms. In some case-study areas, females operate half or more of the small farms identified: 70 percent in Senegal, 53 percent in China and 50 percent in Mexico. Women run 33 percent of the small farms in the case-study area of Yemen, 28 percent in Egypt, 19 percent in Indonesia and 17 percent in Rwanda. Overall, 25 percent of the 9 058 120 small farms across the case-study areas have female operators.

The case-studies from Burkina Faso and Bangladesh report no female farm operators and Cameroon reports that less than 1 percent are female. These data are surprising given the role of women in agriculture at the national level. Either the case-study areas are exceptional compared to other areas of these countries or, as is often the case, the women are "invisible" to the data collection methods of these programmes.

Female-headed farms

Unfortunately the data do not differentiate whether the female farm operators are owners of their farms, farm managers with husbands who work off-farm, or are women who head their households. For many of the case-study areas, however, it appears that large numbers of the women identified are heads of their household/farm. Table 4 gives the estimated number and percentage of female-headed farms in the ten case-study areas for which these data are available. The large number of female-headed farms in the study areas of China, Kenya, Mexico and Egypt is especially notable. It can be assumed, by virtue of their status, that women are the primary decisionmakers on these farms. It can probably also be assumed that most of these are low-resource farms. Unfortunately, the size of the female-headed farms is not distinguished by the data.

Landless women

Large numbers of landless producers are present in several case-study areas, particularly those in Indonesia, Bangladesh, Mexico, Yemen and Senegal,

TABLE 5

Male and female landless producers in case-study areas

Case-study countries	Total no ha. covered	Landless producers		
		No. male	No. female	Percentage female
Africa				
Burkina Faso	1 000 000	-	-	-
Cameroon	1 000 000	0	0	0.00
Rwanda	39 149	-	-	-
Senegal	531 326	8 296	2 074	20.00
Asia				
Bangladesh	927 958	269 972	21 544	7.39
China	596 500	-	-	-
Indonesia	6 946 198	1 462 000	345 000	19.09
Philippines	229 600	30	0	0.00
Latin America				
Colombia	173 250	1 225	32	2.55
Mexico	113 180	45 000	45 000	50.00
Near East				
Egypt	60 833	0	0	0.00
Yemen	636 000	9 600	4 800	33.33
Totals	12 253 994	1 796 123	418 450	18.90

Note: - = missing data.

as shown in Table 5.[24] Of the total number of landless producers identified, about 19 percent are female, ranging from 7 percent of the 291 516 landless producers in the study area of Bangladesh to 50 percent of the 100 000 landless in the study area of Mexico.

[24] It is assumed here that the category "landless producers" refers to the landless who work on the farms of others for wages.

With the exception of a few programmes designed specifically to target them, landless producers are generally excluded from agricultural extension services due to their lack of control over land. Nevertheless, the implications of extension for the landless may be great. Agricultural technologies and the organization of extension delivery systems can affect those who contribute only labour to agricultural production by increasing or diminishing their employment opportunities in agriculture.

Women as potential clientele

National data (see Table 2) show that women play an important role in agricultural labour in the case-study countries, and case-study data (see Tables 3, 4 and 5) confirm their roles as farm operators, heads of household/ farm and landless producers. About 24 percent of all the farmers operating small, medium and large farms identified in 12 case-study areas are female. Most of them operate small farms but, in specific cases, women are found operating medium and large farms as well. In some areas, the percentage of female operators is especially high (including large, medium and small farms): 63 percent in Senegal, 53 percent in China, 43 percent in Mexico and 33 percent in Yemen. Further, large numbers of these farms are female-headed. Thus, a significant percentage of the potential clientele of the case-study programmes, in terms of agricultural labour, access to land and decision-making, are female. Whether or not they are actually included in extension activities is explored below.[25]

WOMEN'S ACCESS TO AGRICULTURAL EXTENSION

Beyond their status as agricultural producers and farm operators, a number of other factors may play a role in determining whether or not female farmers

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[25] Rural youth were identified as a separate category of farm operator in the case-study data checklists. This is conceptually inappropriate as youth, like women, should have been identified in terms of their presence on small, medium, and large farms and among the landless. Six case-studies reported disaggregated data on rural youth: Senegal = 64 000 male, 78 200 female; China = 276 367 male, 311 648 female; Indonesia = 15 846 000 male, 16 076 000 female; Colombia = 2 300 male, 2 600 female; Mexico = 510 500 male, 510 000 female; and Yemen = 9 576 male, 9 576 female.

are included as agricultural extension clientele. First, traditional norms in many societies may inhibit women's contacts with unrelated members of the opposite sex, including male extension agents. Second, on the assumption that women's work is directed to the subsistence food crop sector, they may be neglected by agricultural extension services concerned with commercial crop production. (In many countries women are primarily responsible for the production of food crops, but their roles in cash crop production have been expanding in recent years, especially in East Africa, Southeast Asia and South America.) Third, female-headed farms, including those with husbands that have out-migrated to seek work, are most likely to have a low resource base and thus are least likely to be sought out by extension services following a "progressive farmer" strategy. Finally, even if cognizant of women's agricultural roles, extension staff often do not actively seek out contacts with women farmers.[26] As will be discussed, they may require a mandate and training to do so. Overall then, whether or not women participate in agricultural extension is based not only on the characteristics of the extension programmes, including the staff's attitudes toward working with women, but also on the socio-cultural characteristics of the context, the types of agricultural activities carried out by female farmers and their access to productive resources.

Below, women's access to the case-study extension programmes is evaluated in terms of their participation as extension trainees. Then, the implications of women's participation by type of extension activity and by extension approach are explored. Finally, the extension programme areas reaching female farmers are estimated.

Women as trainees

The total number of women and men trained by each of the agricultural extension programmes studied is shown in Table 6. Notably, in four of the case-study programmes, half or more of the trainees are female: 74 percent of the 136 638 farmers trained in Kenya; 64 percent of the 1 745 farmers in Senegal; 55 percent of the 25 795 farmers trained in Mexico; and 65 percent

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[26] Ashby, 1981.

TABLE 6

Males and females trained by case-study extension programmes

Case-study countries	Extension programme approach	No. of ha covered in case-study	Farmers trained by extension programmes studied			
			Years	Total no.	Percentage male	Percentage female
Africa						
Burkina Faso	T&V	1 000 000	1979-1987	218 919	96	4
Cameroon	commodity	1 000 000	1980-87	1 059 800	100	0
Côte d'Ivoire	T&V	2 512 900	1987-88	672 000	100	0
Kenya	T&V	17 110 500	1982-87	136 638	26	74
Mali	participatory	1 279 100	1980-88	2 195	97	3
Rwanda	participatory	39 149	1984-88	214 296	74	26
Senegal	project	531 326	1986-88	1 745	36	64
Asia						
Bangladesh	T&V	927 958	1978-1987	424 328	98	2
China	general	596 500	1980-87	683 121	40	19[1]
Indonesia	participatory	6 946 198	1979-1986	23 960	-	-
Philippines	general	229 600	1982-85	430	44	30[1]
Thailand	general	336 927	1985-88	162 277	38	49[1]
Latin America						
Brazil	participatory	67 200	1980,'82,'86	14 029	47	39[1]
Chile	project	200 000	-	-	-	-
Colombia	project	173 250	1981-88	8 765	66	34
Mexico	general	113 180	1979-1987	25 795	45	55
Peru	project	1 054 345	1985-86	6 246	60	40
Near East						
Cyprus	general	157 000	1978-1987	304 778	35	65
Egypt	general	60 833	1983-87	3 356	100	0
Turkey	general	890 000	-	-	-	-
Yemen	general	636 000	1980-86	22 438	93	7

Note: - = missing data.

[1] Percentages of male and female farmers do not equal 100% because of additional categories, e.g. rural youth.

of the 304 778 trainees in Cyprus are women. In the extension programmes from Rwanda, the Philippines, Thailand, Brazil, Colombia and Peru, a quarter or more of the farmers trained are women. It appears that in these extension programmes there is a significant degree of congruence between the presence of female farmers as potential clientele and their actual participation in extension. In comparison to the global survey data, it can be seen that women's participation in these extension programmes is far above average.

On the other hand, the extension programme in Yemen reports that 7 percent of the 22 438 farmers trained are female though, as shown above, women operate 33 percent of all the farms in the study area. The percentages of women trained by the programmes in Bangladesh, Burkina Faso and Mali also are very low. The extension programmes studied in Cameroon, Côte d'Ivoire and Egypt (where 28 percent of the farm families in the study area are headed by females) report that all of the farmers trained are male.

Whereas Table 6 shows the percentage of women trained by each of the case-study extension programmes, it does not reveal the activities or approaches through which female farmers receive training nor the extension subject matter. For every extension "programme" (e.g. the national extension programme for irrigated rice production), there is a predominant "approach", (e.g. general, commodity or participatory), for which there is a choice of "methods", (e.g. mass, group or individual), within which a number of different "activities" (e.g. farmers' classes and field days) may be carried out. These issues are explored below.

Access by extension activity

There are a number of diverse means by which extensionists reach farmers with agricultural training and information. In general, there are three types of extension "methods" - mass, group and individual - for each of which there are various types of "activities". The selection of methods and activities depends on the resources of the extension programme and the needs of the target clientele. Mass methods include such activities as agricultural education programmes for radio and television. Group methods

include such activities as farmers' classes, demonstrations and field days, for example, on tackling erosion or introducing a new crop. Individual methods include such activities as farm visits, during which the village extension worker (VEW) can familiarize his/herself with the farmers' problems and make recommendations. Another popular extension method is the use of contact farmers, particularly in training and visit (T&V) programmes. Contact farmers are used as focal points for training in the application of new technologies and/or inputs; in turn, contact farmers are expected to teach what they have learned to a number of other farmers.[27]

Each type of extension activity has implications in terms of costs, resource and time requirements and accessibility. They have implications as well for women's participation. Since mass methods are generally designed to provide extension information, while group methods provide limited training, and individual methods provide actual demonstration and practice, it is important to encourage women's accessibility to the full spectrum of extension activities.

The degree of women's access to six different types of extension activities is shown for each of the case-study extension programmes in Table 7.[28] Case-study respondents were asked to measure women's participation in agricultural extension activities, including the percentage of female contact farmers, female members in farmers' groups and women attending farmers' classes, method demonstrations and field days.

Female contact farmers. Many extension programmes utilize contact farmers as a means to profit most from limited staff and resources. Extensionists focus their training on, say, ten contact farmers in a village, each of whom in turn, is expected to pass the information along to ten other farmers in the area.

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[27] Oakley & Garforth, 1985.

[28] There are a few discrepancies between the data reported by individual extension programmes on total percentage of female trainees (see Table 6) and the percentages of women participating across individual extension activities (see Table 7). It is assumed here that these differences are due to the use of additional activities or means for reaching farmers that were not included in the case-study data checklist and thus not included in Table 7.

TABLE 7

Indicators of women's access to agricultural extension activities in the case-studies

Case-study country by extension approach	Percentage women contact fanners	Percentage women members in farmers' groups	Percentage women visited by VEW	Percentage women at farmers' courses	Percentage women at method demonstrations	Percentage women at field days	Average percentage female participants[1]
General							
China	65	17	65	35	40	80	50
Cyprus	-	-	-	50	-	-	50
Egypt	0	0	0	NA	33	20	11
Mexico	43	6	13	64	28	5	27
Philippines	NA	36	36	36	36	36	36
Thailand	-	26	-	50	50	50	44
Turkey	-	-	-	-	-	-	-
Yemen	5	NA	6	6	2	NA	5
Project							
Chile	NA	-	-	-	-	-	-
Colombia	19	32	35	43	52	22	34
Peru	-	-	-	0	0	0	0
Senegal	10	-	60	36	-	30	34
Commodity							
Cameroon	15	-	1	-	29	29	19
T & V							
Bangladesh	1	4	4	-	-	-	3
Burkina Faso	0	10	0	45	10	6	12
Cdted'lvoire	NA	-	-	-	-	-	-
Kenya	27	70	73	-	-	67	59
Participatory							
Brazil	52	47	56	44	-	-	50
Indonesia	0.1	-	-	33	-	-	17
Mali	-	40	-	-	NA	NA	40
Rwanda	28	-	27	-	22	22	25

Note: - = Missing data. NA = activity not appropriate for particular extension programme.
[1] Percentage across activities in table only.

Contact farmers are selected on the basis of their adequate landholdings and appropriate location; their activity in producing the crop(s) of interest; their ability to understand and demonstrate new practices to other farmers (often requiring literacy); and because they are examples of "progressive farmers".

Women tend to be left out of the contact farmer system whether as those selected to be contact farmers or those reached by contact farmers. The bias of most male extension agents is such that they see women as farmers' wives, rather than farm partners or farm operators and, thus, tend to target male farmers exclusively. Women are also less likely to be selected as contact farmers because of their resource constraints. As discussed earlier, the majority of female farmers have small landholdings and, correspondingly, they suffer inadequate access to credit for purchasing the recommended inputs, such as new seed varieties or fertilizers. Women also are less likely to be literate. For these reasons, women are rarely perceived as "progressive farmers". Similarly, because of the resource and socio-cultural constraints of female farmers, male contact farmers also exclude them when sharing their extension information with others in the village.

A study of the T&V extension system in the United Republic of Tanzania showed that female-headed farms derived fewer benefits from the contact farmer method than any other type of farm household - including other non-contact farmers - because of the kinds of constraints discussed above.[29] There are exceptions, however. Evidence from Nigeria and Kenya, for example, indicates that some male agents prefer working with female farmers because women perform most of the farming tasks anyway and are more likely to follow the extensionists' advice. Indeed, the World Bank has found that women are more likely to be selected as contact farmers if the criteria for selection emphasize farming ability.[30]

In the FAO extension programme case-studies, with respect to the range of extension activities in Table 7, it appears that women's participation is

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[29] Due, Mollel & Malone, 1987.

[30] Saito & Weidemann, 1990.

lowest as contact farmers. The exceptions are the case-studies from China, Mexico and Brazil where women are 65 percent, 43 percent and 52 percent of the contact farmers, respectively. As seen above, women operate many of the small, medium and large farms in the study areas of Mexico and China. Therefore, these female farm operators probably have the resources to qualify as contact farmers. Further, the cultural constraints to working with women in these countries may be relatively minimal. In many of the other case-study areas, however, only a small minority of the contact farmers are female or they are excluded altogether.

Women and group extension activities. Women's accessibility appears to be higher in the group extension activities as compared to their participation as contact farmers. The average percentage of women participants across the case-studies reporting data, is 37 percent for farmers' courses, 31 percent for field days, 27 percent for method demonstrations, and 26 percent in farmers' groups. Overall, farmers' courses are the most accessible extension activity for women in the case-study programmes.

The importance of group extension methods for reaching female farmers has been widely documented.[31] As members of groups, women may gain the means to override the resource and socio-cultural constraints that prevent them from participating in other types of extension activities. Groups provide a collective voice to convey the needs of farmers to extension officials and allow members to pool resources for production and to obtain the credit and inputs needed to utilize extension advice. In cultures where contacts between individual men and women are circumscribed, targeting extension to women's groups has additional benefits. For example, some of the socio-cultural constraints are reduced when male agents work with women's groups rather than with individual women and, at least in some societies, women express their needs more freely in the context of women's groups than in those where males are present.

Thus, the extension activities that will be most accessible to female farmers are highly dependent on a number of factors, including women's

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[31] Ashby, 1981; Berger *et al.,* 1984.

access to resources and their cultural context. With respect to the latter, the case-study data show that, of the farmers receiving agricultural training through farm visits by VEWs - which usually involves one-to-one training in the farmers' own fields - 65 percent are female in China, 60 percent in Senegal, 73 percent in Kenya and 56 percent are female in Brazil. On the other hand, no women receive extension information through farm visits in the case-study area of Egypt. The female farmers in this extension programme have access only through method demonstrations and field days, both of which are group activities.

Access by extension approach

In Tables 6 and 7, the approach of each case-study extension programme is noted. The term "approach" is used to mean the organizing framework for the delivery of extension services. The type of approach utilized by a programme is consequential, "...influencing management decisions in the area of planning, for determining subject-matter coverage, in the choice of extension methods, for the targeting and participation of clientele, in determining resource requirements and resource allocation and for the monitoring and evaluation of extension activities and extension-associated development impact".[32] While not necessarily mutually exclusive, each approach serves as a guide and style of action.

The case-studies discussed here are based on five extension approaches: general, project, commodity, T&V and participatory (see Appendix II). The characteristics of each of these approaches have implications for the participation of female farmers. In fact, a 1988 review of extension approaches showed that the programmes using the participatory approach were more likely to include women among their clientele than the general, T&V, and commodity approaches that were found to deal primarily with male farmers, while the project approach was variable in this regard.[33]

To compare, FAO's case-study extension programmes are evaluated below. Following a brief description of each approach, a table summarizes

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[32] Contado, 1990, p. 78.
[33] Axinn, 1988, p. 117-119.

the extension programmes under that approach in terms of women's access. Women's access in each programme is evaluated on the basis of three variables: (a) the total percentage of women trained (from Table 6); (b) the average percentage of female participants across six selected extension activities (from Table 7); and (c) women's participation in extension planning as rated on a five-point scale by each case-study programme. The first two variables are indexed to a five-point scale on the basis of the percentage of female participants. If women are less than 1 percent of the participants, the score=0; 1-15 percent = 1; 16-25 percent = 2; 26-35 percent = 3; 36-45 percent = 4; and over 45 percent = 5. Then, variables one through three are added. Of a total possible score of 15, those programmes scoring five or less, are ranked as having *low* access for women; those scoring between six and ten are ranked as having *moderate* access for women; and those scoring over ten are ranked as having *high* access for women. Women's participation in planning is given equal weight with the indicators of their participation as trainees and as participants in the selected extension activities, because planning is equated with a degree of power and certainly influences the shape of the extension services that follow.

General. The general extension approach is identified with broad agricultural and rural development objectives and is characteristic of governmental extension programmes run by ministries of agriculture. It is the classic approach to extension and, for over 80 years, has been the most common throughout the world.[34] Technology transfer from government to farmer is the basic goal but general extension programmes tend to cover the entire spectrum of farm and home improvement and may include extension in such areas as improvement of cultivation practices, production of agronomic and horticultural crops, livestock production as well as farm management, home economics, rural youth programmes and soil conservation.

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[34] Axinn, 1988.

TABLE 8

Women's access in general approach extension programmes

General approach case-study extension programmes	Total percentage female trainees reported	Average percentage females in 6 selected extension activities	Women's participation in extension planning[1]	Women's access score and ranking
China	19	50	2	(9) Mod
Cyprus	65	50	-	(10) Mod
Egypt	0	11	4	(5) Low
Mexico	55	27	4	(11) High
Philippines	30	36	5	(12) High
Thailand	49	44	2	(11) High
Turkey	-	-	-	-
Yemen	7	5	0	(2) Low

Note: - = missing data.
[1] Responses scaled 1 (not involved) to 5 (very involved).

Of the eight case-study extension programmes that follow the general approach, women have a *high* degree of access to three of them - in Mexico, the Philippines and Thailand.

Project The project approach assumes that rapid agricultural and rural development are best achieved by efforts outside those of large government bureaucracies and is therefore carried out within particular locations and for specified periods of time. The purpose may be to demonstrate what can be accomplished in a relatively brief span; to test a variety of alternative extension methods, so as to learn which are most appropriate for a particular area; or to provide the extension component to a large integrated rural/ agricultural development project.[35] The project approach relies on large infusions of outside funds and foreign aid is often involved.

Women's access to the extension programmes using a project approach is *moderate* in the three programmes reporting disaggregated data on the

[35] Axinn, 1988.

TABLE 9

Women's access in project approach extension programmes

Project approach case-study extension programmes	Total percentage female trainees reported	Average percentage females in 6 selected extension activities	Women's participation in extension planning[1]	Women's access score and ranking
Colombia	34	34	3	(9) Mod
Peru	40	0	3	(7) Mod
Senegal	64	34	2	(10) Mod

Note: - = missing data.
[1] Responses scaled 1 (not involved) to 5 (very involved).

selected indicators. The programme studied in Senegal has a very high percentage of women as trainees but, overall, has only *moderate* access for women because women have very little say in planning the programme.

Commodity. The commodity approach is different from other approaches in that it focuses on the promotion and production of one particular commodity, usually an export crop such as cotton, coffee, rubber or tea. Farmers are provided with training and inputs but these are limited to the crop concerned. Commodity organizations or parastatal-based extension systems employ this approach, although ministries of agriculture may also include commodity-oriented programmes where the production of specific cash crops is a governmental priority.[36]

The commodity approach is generally assumed to exclude female farmers due to its focus on cash crops but the case-study programme from Cameroon shows that there are exceptions. Women have *moderate* participation in this programme, due primarily to their involvement in method demonstrations, field days and extension planning.

T&V. The training and visit approach (T&V) has spread rapidly since the mid-1970s due to the promotion of the World Bank and the United States

[36] Contado, 1990.

TABLE 10

Women's access in commodity approach extension programmes

Commodity approach case-study extension programmes	Total percentage female trainees reported	Average percentage females in 6 selected extension activities	Women's participation in extension planning[1]	Women's access score and ranking
Cameroon	0	19	4	(6) Mod

Note: - = missing data.
[1] Responses scaled 1 (not involved) to 5 (very involved).

Agency for International Development (USAID) among others. It is distinguished by a mandate of efficiency sought through a fixed pattern of visits to farmers and training of field staff, along with a strict schedule of daily and fortnightly activities. The purpose of this approach is to improve the quality of contacts between farmers and extension field-workers and to strengthen the linkages between research and training, while inducing farmers to increase the production of specified crops.

In three of the four case-study extension programmes following the T&V approach, women have no or *low* access. The contrary is found for the progamme studied in Kenya where women have *high* access to its extension services, as trainees, participants in extension activities and planners.

Participatory. The participatory extension approach starts from the assumption that effective extension is best delivered with the active participation of the farmers as well as the participation of research and related services. Reaching farmers through their own groups and organizations is the key and extension priorities are based on the farmers' expressed needs. A broad range of agricultural subjects may be addressed, shifting local focus from time to time as village problems arise or change.[37]

The case-study programmes using the participatory approach are quite mixed in terms of women's access. Women have *low* access to the

[37] Axinn, 1988.

TABLE 11

Women's access in T&V approach extension programmes

T&V approach case-study extension programmes	Total percentage female trainees reported	Average percentage females in 6 selected extension activities	Women's participation in extension planning[1]	Women's access score and ranking
Bangladesh	2	3	1	(3) Low
Burkina Faso	4	12	2	(4) Low
Côte d'Ivoire	0	-	0	0
Kenya	74	59	4	(14) High

Note: - = missing data.
[1] Responses scaled 1 (not involved) to 5 (very involved).

programme in Indonesia, *moderate* access to those in Rwanda and Mali and *high* access to that in Brazil.

To sum up, the extension approach of the above case-study programmes appear to have limited bearing on women's access. Instead, though a sample of only 21, these case-studies suggest that all of the approaches can be either effective or ineffective in reaching female farmers. The approach itself is not necessarily a determinant factor. More *high* access cases are found under the general approach than any other, but the project, T&V and participatory approaches each include a *high* access extension programme as well. Only the commodity approach is excluded, though Cameroon's commodity programme has *moderate* access for women. Cases with no or *low* access for women also are found among the general, project, T&V and participatory extension approaches. Indeed, the most critical aspect of each approach with respect to women's access may lie in the resulting package of extension activities offered and the programme areas given priority.

The programme areas reaching women

Extension services are directed toward priority agricultural topics, such as irrigation, fertilizer application, pest management and so on. Ideally, these topics or programme areas are based on client requests and/or an assessment

TABLE 12

Women's access in participatory approach extension programmes

Participatory case-study extension programmes	Total percentage trainees reported	Average percentage 6 selected extension activities	Women's participation in extension planning[1]	Women's access score and ranking
Brazil	39	50	2	(11) High
Indonesia	-	17	2	(4) Low
Mali	3	40	3	(8) Mod
Rwanda	26	25	4	(9) Mod

Note: - = missing data.
[1] Responses scaled 1 (not involved) to 5 (very involved).

of client needs. Table 13 shows the importance of each of 11 extension programme areas as ranked by the case-study respondents. Responses are scaled from one *(not important)* to five *(very important)*.

The priority programme areas for the case-studies overall are, in descending order: cereal and food crops; crop protection; tillage and fertilizer; and cooperatives and associations. The least important programme areas are, in descending order: home economics; rural youth; livestock; and the prevention of post-harvest losses. Thus, cereal and food crops are the most important programme areas and the prevention of post-harvest losses is the least important across the 21 extension programmes studied. Since home economics and the prevention of post-harvest losses are usually seen as "women's issues", it is important to note that both are given low priority. Food crops, on the other hand, are often considered "women's crops" and these are given high priority in several of the programmes. Of course, the programme areas of the individual extension services vary widely.

The programme areas that reach female farmers can be only roughly estimated. It cannot be assumed that female farmers are receiving information and training in the priority programme areas. The extension services offered to women may very well differ from those offered to men;

TABLE 13

Importance of programme areas in case-study extension programmes[1]

Case-study countries	Cereal/ food crops	Horticulture	Tillage & fertilizer	Crop protection	Post-harvest losses	Livestock	Irrigation & water mgmt.	Farm mgmt. & marketing	Home economics	Rural youth	Coops/ assocs.
Case-studies with high access for women											
Brazil	5	3	2	5	_	4	5	3	3	5	5
Kenya	5	3	4	4	4	2	2	2	3	3	1
Mexico	4	3	4	3	2	3	5	4	5	2	5
Philippines	5	5	5	5	5	4	5	5	5	5	5
Thailand	5	5	4	4	4	2	4	5	5	4	3
Case-studies with moderate access for women											
Cameroon	5	5	1	5	_	2	1	4	2	5	4
China	5	4	5	5	3	_	_	_	3	5	4
Colombia	4	2	4	5	5	4	5	5	4	4	4
Cyprus Mali	4	5	5	5	1	5	5	3	4	2	3
	4	2	5	4	3	5	3	5	3	2	5
Rwanda	5	5	5	5	5	4	3	5	2	3	5
Senegal	5	3	5	5	3	-	4	4	3	4	5
Case-studies with low access for women											
Bangladesh	5	4	5	5	2	_	5	2	2	_	2
Burkina Faso	4	2	4	4	4	3	2	4	3	2	4
Chile	5	4	3	1	1	1	1	4	1	1	1
Egypt	5	5	4	4	2	4	3	3	1	2	5
Indonesia	4	4	5	5	5	4	5	5	4	4	5
Cdted'lvoire	3	4	2	3	2	-	3	4	1	1	4
Turkey	3	2	3	3	2	3	4	2	4	3	2
Yemen	4	4	4		1	3	5	3	3	1	2

Note: - = missing data.

[1] Responses scaled 1 (not important) to 5 (very important).

they may receive training in home economics rather than irrigation, for example. It is assumed here, however, that within the *high* access cases, women are more likely to receive training in the priority programme areas than in the *low* access cases because, in the former, women form a large percentage of the total extension clientele and they participate in a number of the mainstream agricultural extension activities. Of course, access to the full range of agricultural programme areas made available is as important to female as to male farmers.

In the case of the T&V programme studied in Kenya, for example, only cereal and food crops are ranked as *very important,* with tillage and fertilizers, crop protection and post-harvest losses ranked as *important.* As female farmers are 74 percent of the total trainees in this programme and 59 percent of the extension activities' participants, it can be assumed that they are receiving extension in these programme areas. For the general approach programme studied in Mexico, irrigation and water management, cooperatives and associations, as well as home economics are ranked as *very important* programme areas. *Important* topics include food crops, tillage and fertilizer and farm management and marketing. As women are 55 percent of the total trainees in this programme and 43 percent of the contact farmers, 64 percent of the participants in farmers' courses and 28 percent of those attending method demonstrations, it is likely that female farmers are receiving information and training in irrigation, and tillage and fertilizer as well as in home economics and food crops through this extension service.

As shown by the findings of the global survey discussed earlier, the resources allocated by extension programmes to home economics are generally negligible. It is interesting to note in Table 13 that some of the case-study programmes offer women access to agricultural as well as home economics training, especially the extension services studied in Mexico, the Philippines and Thailand, all of which are general approach programmes. Others, namely the extension services studied from Bangladesh (T&V), Chile (project), Côte d'Ivoire (T&V) and Egypt (general) have low access for women in both agriculture and home economics. Still other extension programmes, including those studied in Indonesia (participatory) and

Turkey (general), where women are largely excluded from the agricultural extension activities, give moderate importance to home economics extension. In these latter cases, despite the strong role of women in agricultural labour nationally (see Table 2), home economics may be seen as the most appropriate subject matter for women.

SUMMARY

While the survey data paint a dismal picture with respect to women's access to agricultural extension, the data from the case-studies give reason for optimism. Women have considerable access to mainstream agricultural training in the case-study extension programmes from Mexico, the Philippines, Thailand and Brazil. In addition, the extension programmes studied in Cameroon, China, Colombia, Cyprus, Mali, Peru, Rwanda and Senegal all include female clientele to a degree far above the average suggested by the global data. Overall, the case-study programmes demonstrate the multiplicity of approaches, activities and programme areas that can be appropriate and effective for reaching female farmers.

Worldwide, however, women's access to agricultural extension is restricted. Two broad trends that work to keep female farmers on the periphery of extension can be discerned from the survey and case-study data discussed above. First, since most extension resources are absorbed by programmes for commercial and commodity producers, most female farmers do not qualify as members of the target group, nor do small farmers in general. While female farmers play crucial roles in agricultural production and in farm and home management, they are for the most part low-resource farmers with small landholdings, producing for domestic consumption.

Second, women farmers are neglected by most extension programmes simply by virtue of their gender. There are multiple layers of restrictions placed between female farmers and extension programmes. In the first place, women remain largely unrecognized by most extension services and are not counted among their target clientele. The rarity of sex-disaggregated data on extension testifies to their invisibility. Furthermore, women's access to resources, including land, credit and inputs, depends not only on their

ability to afford them but also on whether the socio-cultural norms facilitate or hinder women's access to them. Similarly, women's participation in extension, whether as individual farmers or in groups, is conditioned by their access to resources and the socio-cultural norms. In addition to these factors, women's participation is influenced by their time constraints. Poor female farmers are probably the busiest people in the world. If the delivery mechanisms for agricultural training require long trips from home or frequent meetings during harvest time or other peak labour periods, the participation of most women - but especially those of female-headed farms - will be precluded.

Thus, on the basis of the survey and case-study findings, women's access to agricultural extension appears to be conditioned by at least four key factors; (a) whether or not the extension programme reaches farmers with small landholdings; (b) whether or not the extension programme explicitly targets female as well as male farmers, appropriate to their agricultural roles; (c) whether or not there is congruence between women's agricultural activities and access to resources, and the types of extension activities and programme areas offered; and (d) whether or not there is congruence between the socio-cultural norms regarding women's roles, mobility and male-female interactions, and the types of extension activities and programme areas offered. Another key factor, that of female extension staff, is explored below.

Women as extension personnel

There are a number of arguments concerning the importance of female staff in agricultural extension services. The root of them all lies in the fact that extension agents presently are overwhelmingly male, while a significant percentage of the agricultural labour force is female. The lack of female personnel is often noted as a constraint to improving the delivery of agricultural services to women.

One argument points out the traditional barriers to communication between men and women in many cultures; how female extension workers are able to access women's local social networks, whereas men may not; and that, overall, the dynamics of communication are most effective when extension agents are similar to their clients in all respects except technological competence.[38] Research in a number of countries in Africa and the Caribbean document that female agents are better able to communicate with women farmers than their male counterparts, even in countries with relatively few social barriers to male-female interactions.[39] One strategy, therefore, for ensuring that the needs of female farmers are met is to build up the number of female agents so that woman-to-woman extension delivery is possible.

Others caution that, if programmes are operationalized so that women work only with women and men work only with men, the paucity of women in agricultural services assures that female farmers will remain largely neglected. A key problem then, is that many male agents do not regard women as "real farmers".[40] A strategy proposed for the immediate future is to retrain and reorientate male extension staff to work with women. Training

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[38] Ashby, 1981; Saito & Weidemann, 1990.

[39] Saito & Weidemann, 1990; Blumberg, 1989.

[40] FAO, 1988a.

male agents to include women among their clientele has been successfully carried out in Malawi, for example.[41] A method that has been found effective in many other instances is for male extensionists to work with women's groups.[42] Further, it has been seen in some contexts that the gender of the extensionist is less important than his/her attitude toward working with women.[43]

Indeed, female extension agents may be an important but not sufficient factor for reaching female farmers. If extension programmes dedicate their resources to large-scale commercial farmers - whether or not there are female agents - the majority of women will be excluded. This was demonstrated in a study of five extension programmes (Botswana, Kenya, Caribbean, Thailand and Nepal) in which some of the extension agents were women but their contact with female farmers was not necessarily better than that of the male extension workers. Instead, due to the emphasis on commercial farming and cash crops, both male and female extension workers tended to focus on male farmers. One reason for the lack of contact with female farmers was the lack of incentives to spend time with subsistence farmers.[44]

Overall, there is evidence that female agricultural extension agents can more effectively communicate with female farmers and, in some cultural contexts, it is the only way to reach female farmers. In other contexts, a number of other strategies are also feasible, including reorientation of male agents to work with female farmers and/or women's groups, and male-female teams. However, whether or not there are female agents, the objectives of the extension programme also play a role in determining whether women will be reached.

The status of women as extension personnel during the 1980s is presented in Table 14 on the basis of the 1989 global survey data. From the case-study information, the relationship between female staff and reaching female farmers is then explored.

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[41] Spring, 1988.

[42] FAO,1990d.

[43] Safilios-Rothschild, 1989.

[44] Carloni, 1987. Cited in Blumberg, 1989.

FEMALE STAFF BY REGION

Worldwide, public extension programmes from 97 countries reported information on male and female personnel, representing the regions of Africa, Asia and the Pacific, Europe, Latin America and the Caribbean, the Near East and North America (see Appendix I for a list of the respondent countries). For each region, a country-by-country presentation of extension staff, tabulated on the basis of the 1989 survey data as reported in FAO's *International directory of agricultural extension organizations,* is attached in Appendix III. Given the degree of missing data in some cases, this information must be viewed as approximate.

Table 14 is a summary of the 1989 survey data for each region and worldwide. Respondents were asked to provide data for every level of extension personnel: administrators and supervisors, technical and subject-matter specialists, field-workers in agriculture, field-workers in home economics and others.

Overall, the 1989 global survey data show that 15 percent of the world's extension personnel are female, ranging from a high of about 40 percent in North America, to almost 17 percent in both Latin America and Europe, about 15 percent in Asia and just under 11 percent in the Near East and Africa.[45]

The number of female extension staff is lowest in Africa where only 4 405 out of the 42 117 reported extension personnel are women; the Near East region reports 987 out of 9 226 extensionists are female; Latin America reports 2 791 females among its 16 885 extension staff. The Asia region reports both the largest numbers of extension personnel in the world and the largest numbers of female extensionists; 41 355 out of 280 415 extension personnel in Asia and the Pacific are women. Altogether, a worldwide total of 57 465 female extension personnel is reported.

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[45] There are some differences between the data on female extension personnel presented here and those presented in Swanson, Farmer & Bahal, 1990, on the basis of the same survey. A few additional countries responded since the data were prepared for the chapter by these authors. Moreover, here there is no use of extrapolation to fill in for missing data. The information presented is strictly based on the personnel data as reported in the *International directory of agricultural extension organizations* (FAO, 1990b).

TABLE 14

Summary of 1989 global survey of agricultural extension organizations: gender of extension staff by region[1]

Region	No. of respondent countries	Administrators/ supervisors		Subject-matter specialists		Field-work in agriculture		Field-work in home economics		Total extension staff[2]	
		No. male	No. female	No. male	No. female	No. male	No. female	No. male	No. female	Total no.	Percentage female
Africa	27	1 971	92	4 178	467	23 658	2 069	221	1 034	42 117	10.46
Asia	22	17105	3218	30 801	5 882	77 099	3 002	44	3 059	280 415	14.75
Latin America	22	862	.64	1 738	216	5 565	201	68	820	16 885	16.53
Near East	15	1 287	47	397	64	5 153	26	4	72	9 226	10.70
Europe	8	1398	132	623	199	6 109	586	0	874	11 045	16.71
North America	3	613	322	3 579	1 127	3 406	368	44	2 724	15 350	39.62
Worldwide	97	23 236	3 875	41 316	7 955	120 990	6 252	381	8 583	375 038	15.32

Note:[1] Based on sex-disaggregated global survey data as reported in FAO, 1990b. In a few cases, additional staff were reported but not by sex; these are not included.
[2] Total includes additional categories of field-workers.

TABLE 15

Countries reporting 25 percent or more female extension staff

Country	Total no. staff[1]	Total female percentage
Bermuda	10	50.00
Iraq	216	48.61
Philippines	15 444	43.86
United States	15 140	39.99
Sri Lanka	3 267	36.06
Honduras	504	30.56
Finland	710	28.17
Thailand	20 622	27.40
Guatemala	4 889	25.26

Note:[1] Based on sex-disaggregated data only.

Of course, there are wide variations between countries as is shown in Appendix III. Thirteen countries report that less than 1 percent of their extension staff are female: Algeria, Bahrain, Bolivia, Cook Islands, Ecuador, Côte d'lvoire, Lebanon, Oman, Pakistan, Qatar, the Kingdom of Saudi Arabia, United Arab Emirates and Zaire. Only nine countries report that women make up 25 percent or more of their extension personnel. These are shown in Table 15.

FEMALE STAFF BY LEVEL

Not only are there tremendous differences in the percentage of women staff between regions and countries, there are also variations in women's presence by type and level of extension personnel. The more professional and better-paid positions are those as administrators and supervisors and as technical and subject-matter specialists. The administrative positions are often urban-based within the ministries or departments of agriculture. Subject-matter specialists usually work at the district level, from where they

provide technical training and guidance to extension field-workers. The field-workers stay mostly in the rural areas working directly with farmers.

Administrators/supervisors. There are very few female extension programme administrators and supervisors in the Near East and Africa -only 4 percent of the administrators in each are women. About 7 percent of administrators are female in Latin America, 9 percent in Europe, 16 percent in Asia, and a high of 34 percent in North America. The worldwide total for female administrators and supervisors is 3 875 out of 27 111, or 14 percent of the administrators reported.

Subject-matter specialists. Among the technical and subject-matter specialists, the numbers of women are slightly higher than those for administrators, ranging from lows of 10 percent in Africa and 11 percent in Latin America, to 14 percent in the Near East and 16 percent in Asia, to a high of about 24 percent in both Europe and North America. Of the 49 271 technical and subject-matter specialists reported in the global survey, 7 955 or 16 percent are female.

Field-workers in agriculture. Among all levels and types of personnel, women's presence is smallest among agricultural field-workers. One-half of one percent of the agricultural field-workers in the Near East are female, 4 percent in Asia, up to 8 percent in Africa and 9 percent in Europe, to about 10 percent in both Latin America and North America. On the whole, women are 5 percent, or 6 252 out of the world's 127 242 reported field-workers in agriculture.

Field-workers in home economics. Whereas female staff are a distinct minority in every other category of extension personnel, they predominate as field-workers in home economics. The number of home economics agents, however, is very small. Overall, 96 percent of the world's 8 964 home economics agents reported are female. It is interesting to note that 381 of the home economics agents reported are male, most of them in Africa. Only Europe reports that all of its home economists are women.

A LOOK AT THE DECADE

The global extension survey conducted in 1980, to which 57 countries reported sex-disaggregated data, showed that 19 percent of the extension personnel in the world were female.[46] The 1989 data, based on reports from 97 countries, reveal a total of 15 percent female extension staff. The two sets of data, however, differ. Only 35 countries reported sex-disaggregated data on personnel for both the 1980 and 1989 surveys. Thus, these 35 countries alone provide directly comparable information.

A summary of personnel data from the 35 countries for both 1980 and 1989 is shown in Table 16. On the basis of this sub-sample, the worldwide total for female personnel increased from nearly 20 percent in 1980 to nearly 23 percent in 1989. It appears however that, in most cases, this increase is due primarily to improved reporting of sex-disaggregated extension data, though small increases in the percentage of female staff are evident for specific countries, such as Zimbabwe, Thailand, Guatemala, Honduras, and Trinidad and Tobago. The number of female extensionists also increased in Jordan, from zero in 1980 to ten in 1989 and, in Yemen, from two in 1980 to 12 in 1989. These numbers are miniscule but, given the starting point, they raise the overall percentages for the region. Hopefully, they also indicate a trend toward recruiting female staff for agricultural extension programmes.

Did the presence of women among extensionists increase or not during the 1980s? Given that the 1989 sample is significantly larger than the 1980 sample, the 15 percent figure probably more accurately reflects the global picture concerning female extension personnel. The benefit of looking at the sub-sample of 35 countries which responded to both surveys is that improvements in individual countries are revealed. However, also revealed is how very small improvements can affect the regional percentages. The bottom line is that, in most countries, there have been very few female agricultural extensionists throughout the decade.

FEMALE STAFF IN THE CASE-STUDY PROGRAMMES

As in the global survey, case-study respondents reported sex-disaggregated

[46] Swanson & Rassi, 1981.

TABLE 16

Summary of sex-disaggregated personnel data reported 1980 and 1989

Region and country	1980 Survey			1989 Survey		
	Total no. male staff	Total no. female staff	Percentage female staff	Total no. male staff	Total no. female staff	Percentage female staff
Africa						
Gambia	627	15	2.33	200	15	6.98
Mauritius	74	2	2.63	67	1	1.47
Senegal	1 159	4	0.34	618	9	1.44
Tunisia	12	3	0.20	2 345	86	3.54
Zimbabwe	2 233	95	4.08	2 184	184	7.77
Subtotal	4 105	119	2.82	5 414	295	5.17
Asia and the Pacific						
Australia	1 374	48	3.38	124	5	3.88
Japan	13 575	2 753	16.86	10 200	2 200	17.74
Korea	7 300	348	4.55	7 623	356	4.46
Malaysia	3 753	872	18.85	2 713	678	19.99
Nepal	5 132	17	0.33	2 181	26	1.18
Philippines	11 406	7614	40.03	8 670	6 774	43.86
Thailand	5 701	1 785	23.84	14 972	5 650	27.40
Tonga	67	10	12.99	36	8	18.18
Vanuatu	49	0	0.00	45	2	4.26
Subtotal	48 357	13 447	21.76	46 564	15 699	25.21
Latin America						
Argentina	447	108	19.46	868	121	12.23
Bolivia	158	0	0.00	117	1	0.85
Costa Rica	225	85	27.42	523	78	12.98
El Salvador	343	137	28.54	381	65	14.57
Guatemala	542	64	10.56	3 654	1 235	25.26
Honduras	336	63	15.79	350	154	30.56
Trinidad and Tobago	137	10	6.80	166	24	12.63
Uruguay	181	30	14.22	142	15	9.55
Subtotal	2 369	497	17.34	6 201	1 693	21.45

TABLE 16 (cont'd)

Summary of sex-disaggregated personnel data reported 1980 and 1989

Region and country	1980 Survey			1989 Survey		
	Total no. male staff	Total no. female staff	Percentage female staff	Total no. male staff	Total no. female staff	Percentage female staff
Near East						
Bahrain	8	1	11 .11	11	0	0.00
Cyprus	177	15	7.81	346	8	2.26
Jordan	188	0	0.00	85	10	10.53
Qatar	10	0	0.00	12	0	0.00
Saudi Arabia	632	0	0.00	392	0	0.00
United Arab Emirates	63	0	0.00	89	0	0.00
Yemen	121	2	1.63	114	12	9.52
Subtotal	1 199	18	1.48	1 049	30	2.78
Europe						
Belgium	296	118	28.50	151	9	5.63
Finland	476	186	28.10	510	200	28.17
Iceland	57	0	0.00	55	2	3.51
Sweden	1 473	100	6.36	605	105	14.79
Subtotal	2 302	404	14.93	1 321	316	19.30
North America						
Bermuda	11	0	0.00	5	5	50.00
Canada[1]	730	170	18.89	179	21	10.50
Subtotal	741	170	18.66	184	26	12.38
Total	59 073	14 655	19.88	60 733	18 059	22.92

Note:[1] 11 provinces of Canada responded in 1980, but only three responded in 1989.

TABLE 17

Case-study extension personnel: male and female

Case-study countries	Administrators/ supervisors		Subject-matter specs.		Field-workers		Total ext. staff	
	No. male	No. female	No. male	No. female	No. male	No. female	Total no.	Percentage female
Africa								
Burkina Faso	7	0	13	0	120	10	150	6.67
Cameroon	518	0	84	0	836	0	1 438	0.00
Côte d'l voire	74	1	119	0	763	0	957	0.10
Kenya	-	-	-	-	-	-	1 274	13.001
Mali	1	1	18	0	192	2	214	1.40
Rwanda	3	1	8	5	60	24	101	29.70
Senegal	1	1	8	5	341	37	393	10.94
Asia								
Bangladesh	25	0	197	0	1 173	35	1 430	2.45
China	150	64	1 623	668	6 063	4 043	12611	37.86
Indonesia	-	-	-	-	-	-	231	-
Philippines	1	0	2	2	0	2	7	57.14
Thailand	23	0	8	3	83	18	135	15.56
Latin America								
Brazil	1	0	3	1	23	17	45	40.00
Chile	0	0	3	1	11	0	15	6.67
Colombia	2	0	4	1	12	6	25	28.00
Mexico	6	0	71	10	174	39	300	16.33
Peru	7	1	29	12	90	40	179	29.61
Near East								
Cyprus	-	-	-	-	-	-	354	13.001
Egypt	123	0	10	0	769	0	902	0.00
Turkey	-	-	-	-	-	-	-	-
Yemen	6	0	13	1	30	1	51	3.92
Totals	948	69	2213	709	10 740	4 274	20 812	26.66

Note: - = missing data.

[1] Disaggregated data were not available for Kenya or Cyprus but case-study reports estimate between ten and 15, and 13 percent, respectively.

data for each level of their extension personnel. This information is summarized in Table 17. Similar to the survey results, very few females are found among the case-study extension programmes' personnel at all levels. Their numbers are smallest among the administrators. The exception is the programme studied in China where women make up about 30 percent of the administrators and subject-matter specialists and about 40 percent of the 6 603 field-staff members. Unfortunately, the case-study data do not delineate the types of field-work, whether agricultural, home economics or other.

Other programmes with high percentages of female staff are found in Brazil, where women are 40 percent of the 45 staff members; the Philippines, where four of the seven personnel are female; and Peru and Rwanda where 30 percent of the 179 and 101 staff members, respectively, are female. The programmes studied in Cameroon and Egypt apparently have an all-male staff and women are present only in small numbers among the personnel of the extension services studied in Côte d'lvoire, Mali, Chile and Yemen.

Whether or not an agricultural extension programme includes women on its staff appears to be conditioned to some degree by the extension approach of the programme as shown in Table 18. The T&V programmes generally have very few female staff and the commodity programme has none. The project, participatory and general approach programmes are all quite variable, ranging from zero to high percentages of women. The highest percentages of female staff, however, are found in the general approach extension programmes.

Whether or not the presence - or the lack of - female personnel has implications for reaching women farmers is also explored in Table 18 in which the case-studies are grouped according to their women's accessibility ranking, *high, moderate* or *low,* as determined in the earlier discussion on women's participation as clientele. The indication from Table 18 is that the presence of women as extension agents is an important factor for the participation of women as clientele. Generally, the extension programmes with the highest percentages of female staff are those to which female

TABLE 18

Percentage of female staff in case-study extension programmes

Case-study countries	Extension approach	Extension staff	
		Total no.	Percentage female
Case-studies with high access for women			
Brazil	participatory	45	40
Kenya	T&V	1 274	13
Mexico	general	300	16
Philippines	general	7	57
Thailand	general	135	16
Case-studies with moderate access for women			
Cameroon	commodity	1 438	0
China	general	12611	38
Colombia	project	25	28
Cyprus	general	354	13
Mali	participatory	214	1
Peru	project	179	30
Rwanda	participatory	101	30
Senegal	project	393	11
Case-studies with low access for women			
Bangladesh	T&V	1 430	3
Burkina Faso	T&V	150	7
Chile	project	15	7
Egypt	general	902	0
Indonesia	participatory	231	-
Côte d'lvoire	T&V	957	0.10
Yemen	general	51	4

farmers have high and moderate access and those with small numbers or no female staff are those with few female clientele.

There are exceptions, however. Of the 21 extension services studied, the programme from Kenya has the highest rate of female participation as clientele; 74 percent of the trainees are female while only 13 percent of the staff are female. In the programme study from China, on the other hand, in which 38 percent of the staff are female, only 19 percent of the farmers trained are female. The case programmes from Cameroon and Mali have no or only negligible numbers of female staff, yet women participate in their extension activities to a *moderate* degree.

Again, the importance of having female extensionists in order to reach female farmers appears to be conditioned by the cultural standards pertaining to interactions between non-related men and women. In Kenya, for example, male agents can and do work with female farmers. On the whole, however, those programmes with significant percentages of female staff are the same programmes that have significant percentages of female clientele, as seen in the case-study programmes from Brazil, the Philippines, Colombia, Peru and Rwanda.

Table 19 provides a comparison of the national data on extension personnel (based on the global survey) and the case-study data for each of the case-study countries. The extension programmes studied in Burkina Faso, Côte d'Ivoire, Mali and Bangladesh seem to be fairly representative in that both the case programmes and the national programmes report low percentages of female staff. On the other hand, the programmes studied in Rwanda, Senegal, the Philippines, Brazil, Colombia, Peru and Cyprus all appear to be exemplary in comparison to the national programmes, each reporting a significantly higher percentage of female personnel. The case-study from Yemen, on the other hand, shows only 4 percent female staff whereas the national data show 10 percent.

SUMMARY

As with women's participation as extension clientele discussed earlier, many of the case-study programmes are better-than-average in terms of female staffing though the average across the programmes is just over

TABLE 19

Comparison of percentage of female extension staff nationally and in case-study programmes

Country	Total no. staff nationally	Percentage female staff nationally	Total no. staff in study area	Percentage female staff in study area
Africa				
Burkina Faso	1 803	10	150	7
Cameroon	-	-	1 438	0
Côte d'Ivoire	1 427	0.42	957	0.1
Kenya	-	-	1 274	13
Mali	1 757	2	214	1
Rwanda	2 537	4	179	30
Senegal	627	1	393	11
Asia				
Bangladesh	16 397	3	1 430	2
China	121 865	25	12611	38
Indonesia	-	-	231	-
Philippines	15 444	44	7	57
Thailand	20 622	27	135	16
Latin America				
Brazil	2 425[1]	23	45	40
Chile	-	-	15	7
Colombia	2315	7	25	28
Mexico	-	-	300	16
Peru	123[1]	17	179	30
Near East				
Cyprus	354	2	354	13
Egypt	4 926	9	902	0
Turkey	1 489[1]	24	-	-
Yemen	126	10	51	4

Note: National data as reported in 1989 global survey.

[1] Some of the data were reported disaggregated by sex and some were not. These totals reflect only the disaggregated data.

16 percent. The 1989 global survey data show that only 15 percent of the world's agricultural extension staff are female. Furthermore, comparing the data from the beginning and the end of the decade, only small improvements in a handful of countries can be found. The pattern of male staffing remains fixed overall. The implications of this enduring situation are brought out by case-study findings that suggest, with a few exceptions, that the presence of female agents increases the likelihood that female farmers will be included in mainstream agricultural training.

Agricultural extension and farm women in the 1980s

Trends with respect to agricultural extension and women farmers did not change very much during the 1980s. For both the beginning and end of the decade, it is documented that female farmers are largely by-passed by the extensionists bringing agricultural information, training and technologies to the field. FAO's 1989 survey data, based on responses from 132 extension organizations, show that only 5 percent of the world's agricultural extension resources are directed to female farmers.

Further, if attention to women must await the recruitment of female extension agents, it will be a long time before they are served sufficiently. Including all levels of staff, 15 percent of the world's extension workers are female. Among agricultural field-workers, women are 5 percent worldwide.

Small signs of progress between 1980 and 1989 are seen in a few specific countries but the global picture remains one in which the majority of both extension clientele and extension staff are male. Thus, the disparity between women's role in agricultural development and women's participation in extension services remains large.

To explore the conditions for women's access to agricultural extension, case-studies on 21 successful extension programmes have been utilized. The characteristics of women in the study areas are estimated in terms of their contributions to agricultural labour, their access to land and roles in decision-making as farm operators, and their status as heads of household/ farm. National data show that 40 percent or more of the women are economically active in agriculture in ten of the 21 countries. These numbers would be much higher if they included women's unpaid and subsistence agricultural work. The case-studies show that about 24 percent of all the farmers operating small, medium and large farms identified in 12 study areas are female. Female farm-operators are found in the greatest numbers on small farms and, in China, Egypt, Indonesia, Kenya, Mexico, Rwanda

and Senegal, large numbers of the study area farm families are female-headed.

The characteristics of the case-study extension programmes are explored in terms of the kinds of extension activities provided, the extension approach, the programme areas given priority and the gender of the staff. For each of these factors, the impact on women's accessibility has been estimated. For example, group extension activities, especially farmers' courses and field days, are found to include more female participants than individual extension activities. Women's participation is most restricted as contact farmers.

On the other hand, it is found that every extension approach to agricultural services, whether general, project, commodity, T& V or participatory, can be effective for reaching female farmers, though the general approach programmes appear to include more women clientele overall. The general approach programmes also tend to include more female staff, though some of the participatory and project approach programmes also include substantial percentages of female personnel. The T&V and commodity programmes have few or no women agents. There are exceptions but, overall, the programmes with the highest percentages of female staff are also those with the highest percentages of female clientele.

To sum up, a substantial percentage of the farms in the case-study areas are run by women. Yet, women's participation as clientele in the agricultural extension programmes studied is found to be *high* in only five of the 21 cases (Brazil, Kenya, Mexico, the Philippines and Thailand) while their access is *moderate* in seven others (Cameroon, China, Colombia, Cyprus, Mali, Rwanda and Senegal). Women are substantially excluded from the remaining eight of these "success story" extension programmes (Bangladesh, Burkina Faso, Chile, Egypt, Indonesia, Côte d'lvoire, Turkey and Yemen). Overall, however, women's participation in agricultural training in these programmes is far above the global average.

The findings of both the survey and case-studies confirm that it is the interrelationship between the characteristics of the female farmers and the characteristics of the extension programmes that is key. One important trend that works to the detriment of women is that while most female farmers have

small landholdings, most extension is directed to farmers with large landholdings.

The case-studies show that where there is congruence between the agricultural activities and resources of female farmers, on the one hand, and the target clientele, priority programme areas and types of activities offered by extension programmes on the other, then women may have access to extension. Their participation also depends, however, on women's constraints in terms of time, mobility and the socio-cultural norms with respect to male-female interactions. Additionally, it must be remembered that women are more than farmers. They have multiple productive and domestic roles. Therefore, efforts to make extension available to women must not focus only on women's roles as agricultural producers, but must consider also their time-consuming but life-sustaining reproductive activities.

In other words, even where women have primary responsibility for the agricultural activities that are of priority concern to an extension programme, they may still be excluded if the appropriate types of extension activities and staffing are not offered. Above all, the policies of extension programmes toward women farmers as well as the attitudes of extension agents may play a key role at every level.

Designing gender-sensitive extension programmes for the 1990s

Improving women's access to agricultural extension requires at least two major changes. First, the policies of public extension programmes - and of the international development agencies that support extension efforts - must specify that priority be given to reaching small farmers and, further, that both female and male farmers be included in extension activities and training as appropriate to their roles in agricultural and rural development. The second change stems from the first. Once policies dictate that female farmers are to be included in extension, the appropriate strategies must be developed. This requires a look at the activities, resources and constraints of the farmers so that appropriate extension activities, programme areas and staffing can be planned. A framework for doing so is briefly outlined below.

A MANDATE IS REQUIRED

The policy framework for agricultural extension programmes should ensure that extension services are not only for technology transfer or for a few big commercial farmers "but, more importantly, for the improvement of farming proficiency and productivity of the large majority of ordinary, small, resource-poor and inefficient/low productivity farmers."[47] A substantial proportion of the small ordinary farmers is female. These women - and their male counterparts - are the farmers who need most and can benefit most from agricultural extension. With the appropriate training and technologies, they are the farmers who can best help their families, villages and countries to attain food security and stem widespread environmental degradation while contributing to an overall increase in agricultural production.

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[47] Maalouf, Contado & Adhikarya, 1991, p. 22.

Thus, greater numbers of female farmers may benefit when agricultural extension programmes focus more on small farmers. But making extension work better for small farmers is not enough. Extension policies also must be explicit in stating that female farmers are to be targeted as clientele; otherwise, they may continue to be underserved.

The job of policy-makers in this case is to give notice to extension planners and implementers that reaching female farmers is recognized as an important factor in achieving the objectives of agricultural and rural development. In other words, extension policies should include a mandate on this issue. Policy mandates are required because, as the global survey data show, agricultural extension continues to be heavily biased toward men despite several years of international acknowledgement of the urgent need for women to receive more support in their agricultural roles. Neither studies documenting the inequitable access of women to agricultural extension nor repeated calls for action to remedy this are, by themselves, going to address the problem. Concrete actions will come only where backed by firm policy and a strong administrative will.[48] Furthermore, guidelines for monitoring whether or not the policy is being carried out and incentives for doing so must also be developed.

In designing extension policies, the heterogeneity of female farmers is an important consideration as is the complexity of gender-based divisions of labour and decision-making in agriculture. Clearly, no single strategy can be applied to all agricultural extension programmes. One strategy that has been found insufficient, however, is the "family approach".

For several years, extension policy-makers have assumed that, through the family approach, husbands, wives and youngsters would all benefit from extension efforts. Indeed, many have argued that assistance should be directed to the farm family as a whole, warning against the creation of separate interest groups, e.g. women. In tandem with its experiences related to extension and women, FAO re-evaluated the family approach during the Global Consultation on Extension and concluded: "In its assistance to

[48] Spens, 1986.

extension development, FAO has always advocated the family approach, including men, women, and youth. The family approach is still considered *important but insufficient* to bring about rapid change on the scale desired"[49] (emphasis added).

The family approach has proved to be ineffective on two counts.[50] First, not every member of the farm family is necessarily involved in the agricultural activities of interest. In East Africa, for example, women are responsible for traditional agriculture while men are primarily involved in herding livestock. In northeast Thailand, on the other hand, it is primarily women who care for livestock. The target group for extension to improve livestock production then is men in East Africa and women in northeast Thailand, assuming no changes in the systems of production.

The second reason why the family approach is often inadequate is because the use of the term "farm families" or "farmers and wives" does not guarantee that women will be included, even where it is critical to do so. Extensionists - overwhelmingly male - tend to deal with male farmers rather than all farmers.[51] For example, two FAO "family approach" projects - one designed to increase poultry production and the other to reduce post-harvest losses - were carried out in areas where women are responsible for poultry and post-harvest processing. Nevertheless, the project activities and benefits failed to reach the women.[52] Past expectations that extension information might "trickle across" from the men trained to their wives and other women in the household, have also proven unfounded.[53]

The issue of staff also is a concern for policy-makers. The numbers of female extensionists need to be increased at every level, most particularly among the agricultural field-workers. The long-term goal is to increase the enrolment of girls in secondary schools since this is the factor most closely associated with female participation in intermediate agricultural training. It

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[49] FAO, 1990a, p. 197.

[50] Carloni, 1987.

[51] Jiggins, 1986.

[52] Carloni, 1983.

[53] Potash, 1985.

is also important to set target rates for female enrolment in agricultural training institutions by which progress can be measured. Once in agricultural training, women must be offered the same technical curriculum as men.[54]

More immediate solutions include reorientating training programmes for home economists in order to cover basic agricultural topics. Because of the institutionalized nature of home economics and the regularity of home economists' contacts with rural women in some areas, they can fill the void where female agricultural agents are not available. FAO is currently supporting efforts to redesign and expand the curricula of home economics programmes so that the needs of rural women can be more appropriately met.[55]

As agricultural extensionists are overwhelmingly male, an important strategy for the immediate future is to train male extension agents to work with women farmers. Male agents often hold stereotypic ideas about women and tend not to see them as farmers in their own right, even in areas of high male out-migration. But these attitudes can be overcome with training and instruction. To ensure that female farmers were reached in Malawi, for example, instructions were given to extension personnel to include the following in their survey of farmers: (a) low as well as high resource farmers; (b) women farmers with both low and high resources; and (c) women as both household heads and wives.[56] Training for male agents should emphasize the diagnosis of women's agricultural activities, resources and constraints (as discussed below), the organization of rural women for extension purposes, appropriate techniques for working with women and providing feedback to supervisors and researchers on technology and messages that female farmers need most.[57]

In conclusion, to benefit agricultural and rural development as a whole, extension policies must ensure that an appropriate share of extension

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[54] Saito & Weidemann, 1990.

[55] Balakrishnan, 1990.

[56] Spring, 1988.

[57] Saito & Weidemann, 1990.

resources is directed to small farmers and, further, that both female and male farmers are explicitly targeted as participants and beneficiaries. The policies must recognize the important role of women as cultivators, herders, foresters and fisherfolk and give them equal opportunity and access to agricultural education and to the technical, financial and other socioeconomic services that are provided to men. To this end, policy support is needed to increase the presence of female agents while also training male agents to work with women. A mandate is required and it should not be blurred or diluted by terms such as "family approach". The mandate should be explicit, stating that both women and men, as appropriate to their roles in agricultural and rural development, will have access to agricultural extension services, training and resources.

GENDER ANALYSIS FOR AGRICULTURAL EXTENSION

Once there is a mandate to include female farmers in agricultural extension, the question of "how" looms large. The findings presented in this paper show that women have access to extension where the characteristics of the extension programmes are responsive to women's activities, resources and socio-cultural constraints. Therefore, the first step to creating gender-sensitive extension programmes is to identify the activities, resources, needs and constraints of all the farmers in a given target area, both female and male. The second step is to incorporate this information into the design of agricultural extension services so that farmers of both genders can participate and benefit.

FAO experience has shown that understanding the relative roles and resources of both women and men has important implications for the design of nearly all agricultural and rural development efforts. Toward this end, a gender analysis framework, currently being introduced to all of FAO's professional staff through training workshops, is relevant as well to the planners and implementers of extension programmes.

Gender analysis is the systematic effort to document and understand the roles of both women and men within a given context. Key issues include: (a) the division of labour for productive and reproductive activities; (b) the resources women and men each utilize to carry out their activities and the

benefits they derive from them; and (c) the relationship of (a) and (b) to the social, economic, environmental and institutional factors that constrain development.

Two general purposes are served by applying gender analysis to agricultural extension programmes. First, gender analysis helps to predict how different members of the community or the household will be affected by extension efforts and to what degree women and men will be able to participate in and reap benefits from them. Second, the information given by gender analysis helps extension planners and field staff to anticipate whether or not the extension programme will be as efficient, effective and equitable as possible. In short, gender analysis is a methodology for linking community information, including gender differentiations, to the technical and programmatic aspects of agricultural extension. The gender analysis methodology has three interrelated components: the activity profile, the resources profile and the constraints analysis.[58] Together, these components provide the information that can lead to effective design and implementation of extension programmes that will maximize female and male participation and benefits, in turn maximizing agricultural development.

Activity profile. The division of labour in agricultural activities should be taken as the starting point for determining who should participate in agricultural extension training. While roles vary both between and within cultures, it is generally found that women and men are responsible for different, though often complementary, productive activities. Their roles may differ by type of activity, such as crop, forestry, livestock and fishery production, as well as by stage of production, such as land preparation, planting, weeding, harvesting, crop processing, marketing and so on. Sometimes the tasks of women and men overlap, as is the case in many Asian cultures, and sometimes they are distinctly separate, as in many African cultures.

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[58] Adapted from Overholt *etal.,* 1985.

The point of the activity profile is to produce a clear picture on "who does what". Which agricultural activities are the predominant responsibility of women? Which activities are carried out predominantly by men? By both? Agriculture calendars are one simple way of documenting the roles of both women and men for different crops and other productive activities, highlighting seasonal patterns as well.

Of course women and men are not only farmers; they are also wives/husbands and mothers/fathers with responsibilities for both subsistence production and household maintenance. These responsibilities take time and effort. For this reason, their reproductive and domestic activities also need to be taken into account by extension planners. Estimates vary from region to region, but it is found that rural women work up to 15-16 hours daily.[59] Because women perform more of the reproductive and domestic tasks than do men, in addition to their agricultural and other productive activities, in almost all cases women work more hours per day than men. Reproductive tasks, including water and fuel collection, food processing and food preparation, are particularly time-consuming and are often carried out with traditional tools and processes.

In short, by documenting the work of both women and men in the activity profile, a number of purposes for extension planners and implementers are served, including: (a) the agricultural activities of both women and men will become visible and thus, each can be targeted for extension training, as appropriate to their respective roles; (b) the inclusion of non-agricultural productive and reproductive activities of both women and men in the profile will help extensionists to identify labour bottlenecks, highlighting areas where the introduction of improved methods or appropriate technologies would be most beneficial to overall productivity; and (c) time constraints can be identified, both over the day and across the seasons, and mobility constraints can be identified, in terms of where the activities of women and men are concentrated, both of which have implications for extension delivery methods.

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[59] FAO, 1990d.

Resources profile. The resources profile is used to delineate the resources that women and men have to carry out their activities and the benefits they derive from them. The question is "who has what"? Resources include such things as land, labour, technology, time, capital and extension training. Benefits derive from the access to and utilization of the resources and include such things as income, food, skills and status. Both access to and control over resources and benefits are often gender-based. For example, in much of the developing world, females are by law or tradition not allowed to own land, cattle or housing. Women may, therefore, have no "control" or decision-making power concerning these resources though they have "access" to them or the use of them in their daily lives. Similarly, in some socio-cultural contexts, access to extension is seen as a male prerogative and women are largely precluded, regardless of who is responsible for the agricultural tasks at issue.

Access and control over land are particularly important to participation in extension. As discussed earlier, women are more likely than men to be subsistence farmers with small landholdings. This is especially true of female-headed farms. But even on farms where husbands are present, men and women may have usufruct rights over separate fields and, generally, the women's fields are smaller, further away from home and, in other ways, less desirable than the men's. In other situations, where men and women work on the same fields, the land is considered "his", not "theirs". In the end, extensionists tend to overlook women's fields and their agricultural work and to direct extension messages to men only. Further, without rights to land titles, women often cannot qualify for credit.

Thus, while women's access to key resources is often constrained, the mechanisms currently used by most extension services, such as the contact farmer method, the use of farmer training centres and reliance on private sector efforts, tend to channel services to those who have the greatest access to resources.[60]

To address such issues, the resources profile helps extension planners and implementers to understand: (a) the resource base of both female and male

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[60] Berger, DeLancey & Mellencamp, 1984.

farmers, especially with respect to land, credit, equipment and inputs; (b) the relative benefits derived by women and men from their work and their utilization of resources, such as income and food; and, therefore (c) the extension package best suited to the resource needs and constraints of both women and men so that they can participate in extension services. For example, among poor farmers it may be best to offer group activities so that resources can be pooled and shared. Also, special mechanisms may be needed to ensure that women have access to credit so that they can purchase the land, livestock, seedlings and fingerlings or technologies and equipment, as appropriate, in order to increase their production.

Constraints analysis. It is in the constraints analysis that differential impacts by gender are considered with respect to the economic, social, environmental and institutional constraints to agricultural development in a particular area. The gender implications of the development constraints can be derived from the information gained in the activity and resources profiles discussed above. Development concerns, as wide-ranging as structural adjustment policies and deforestation, have been documented as impacting women and men in different ways, stemming from their differing responsibilities and access to resources.

The environmental problem of drought provides a case in point. Due to a prolonged drought in Botswana during the early 1980s, nearly one-third of the national cattle herd was lost. This implication of the drought was easily recognized by development planners; less well recognized were the differential impacts for the rural women and men of Botswana. Initially, the drought meant that men had to spend increasingly long periods away from their farms in order to take their cattle to grasslands. At the same time, women had to cover increasingly long distances in order to collect water for their households. One result was that both women and men had less time to devote to their fields and agricultural production began to drop. When the drought became prolonged, many men gave up on cattle production and out-migrated to wage-paying jobs in the South African mines, leaving behind a concentration of female-headed farms. The numbers of female-headed farms also grew because fewer cattle were available for paying the bride-

price. It is now estimated that 48 percent of households in Botswana are headed by women. This has important implications for agricultural extension services. In order to raise agricultural production, extension must be designed in such a way as to be responsive to the needs and priorities of the female farmers in terms of activities, programme areas and delivery mechanisms.[61]

It is also in the constraints analysis that specific barriers between farmers and extension are considered so that successful extension strategies can be developed. The farmers' constraints may include illiteracy, low technology, limited resources, lack of free time, limited mobility and the socio-cultural norms pertaining to male-female interactions. The constraints of extension programmes may include low budgets, lack of infrastructure, inadequate training and high agent-farmer ratios.

Through the constraints analysis, it can be determined whether female farmers should be included in the mainstream activities of extension, or if special components need to be set up for women only. FAO's years of experience in this area caution, however, that women-only components often suffer a number of limitations. First, women-only efforts tend to be welfare-oriented and/or small-scale with few resources. Such components are rarely designed to extend technical expertise for raising productivity or income and women may be required to contribute time and labour with little or no compensation. In the end, women risk becoming further marginalized or isolated from mainstream development. In many countries, women-only modules are contrary to the agricultural labour pattern as women and men often work together. In many Moslem societies, on the other hand, women-only components may be the most appropriate means for reaching female farmers with extension.

In addition to the above, at least three other factors function as barriers between women and extension. First, in most extension programmes there is a lack of sufficient research information on the activities of female farmers. This gap can be addressed in part by carrying out gender analysis as outlined here. Second, there is a lack of incentives in most extension

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[61] J.J. Hourihan, 1990 (personal communication).

programmes to focus on food crops and labour-saving technologies relevant to women's work, though extension is these areas would help farmers most. The third problem hindering the access of female farmers to extension is perhaps the most difficult of all - the problem of attitudes. It is the attitude of many officials and extension workers that reaching women is unimportant.

This last point, for example, is brought out in a recent case-study based on four villages in Malaysia where mixed farming with paddy, rubber, cocoa and cash crops is practised. Across a range of agricultural topics, it was found that women's knowledge is superior to men's with the exception of knowledge on the control of rats in the paddy fields. Nevertheless, extension training for women concentrates on their domestic activities and they are excluded from training on fertilizers, pesticides and equipment.[62]

To recapitulate, through the information gained in the constraints analysis component of the gender analysis framework, extension planners and implementers are enabled to: (a) identify the differential impacts by gender of the agricultural development constraints in any given area, whether they be economic, social, environmental or institutional, and consider their implications in the design of extension efforts; (b) identify the relevant constraints of women and men in terms of time, mobility, illiteracy and so on; (c) on the basis of socio-cultural constraints, determine whether women can be included in mainstream extension efforts or if women-only components are required, and/or if female agents would be most effective; and (d) identify whether extension staff may require training and reorientation with respect to their attitudes toward working with female farmers. Finally, the constraints of the extension programme must be considered in relation to those of the farmers so that the best possible extension package can be assembled.

SUMMARY

Effective work with female farmers cannot be sustained in isolation from the extension programmes as a whole. Ultimately, the effectiveness of

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[62] Airmy *et al*., 1990.

agricultural extensionists in reaching and assisting women will depend on the characteristics of the extension services in which they operate and the quality of the activities and messages they have to offer. Women could benefit from improvements in the organization and delivery of agricultural services, especially if increased emphasis is given to reaching small farmers. But women are only likely to do so if there is a mandate that must be addressed and the mandate is unequivocable in terms of women's inclusion.

The goal of expanding the participation of female farmers in agricultural extension programmes should not simply consist of increasing the numbers of women reached. Once contacted, they must be provided with services that will contribute toward improving their agricultural production and raising their income levels. Further, in taking women's farming responsibilities into account, extension services must be careful to avoid locking women into the existing division of labour in a way that may work to their disadvantage. Given the changing structure of the agricultural sector in most developing countries, women as well as men should be enabled to take advantage of new economic opportunities, e.g. cash crop production.

Making extension programmes responsive to the needs of both genders, however, is highly contextual. For this reason, the gender analysis framework outlined above should be an integral part of every extension programme's planning process. Through the information gained in the activity profile, resources profile and constraints analysis, extension planners can design services on the basis of facts concerning a particular target area, rather than on the basis of assumptions or on the basis of generalizations from other areas. Only after collecting information about both women and men should decisions be made about who to target with extension training, whether men-only, women-only or both. This sounds like common sense, but as shown here, the predominant practice is to target men-only, regardless of women's important roles and contributions in agricultural development. In other words, the goal is to link extension efforts more closely to the realities of the lives of both rural women and men so as to improve women's access to extension while making extension efforts more effective overall.

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Appendix I

1989 GLOBAL SURVEY COUNTRIES REPORTING PERSONNEL DATA DISAGGREGATED BY SEX[1]

Africa

Algeria
Benin (6)
Burkina Faso (4)
Burundi
Cape Verde
Congo (3)
Côte d'lvoire (2)
Ethiopia
Gambia
Ghana (2)
Guinea-Bissau
Malawi
Mali (5)
Mauritania
Mauritius
Mozambique
Niger
Rwanda
Senegal (3)
Sierra Leone
Sudan
Tanzania
Tunisia (11)
Uganda
Zaire
Zambia
Zimbabwe

[1] A total of 115 countries responded to the Global Survey on Extension but Guinea, Austria and Czechoslovakia did not report data on personnel and the following did not provide personnel data disaggregated by sex: Cameroon, Kenya, Morocco, Indonesia, Mongolia, Papua New Guinea, Viet Nam, Chile, Mexico, Syrian Arab Republic, Denmark, Ireland, the Netherlands and Norway. Most countries submitted one (1) survey response, generally on the basis of data from the Ministry/Department of Agriculture. The number of surveys received from countries submitting multiple responses, usually representing different extension organizations and/or different provinces or states, are indicated in parentheses.

Asia and the Pacific

Australia
Bangladesh (2)
Bhutan
China
Cook Islands
Fiji
India
Japan
Korea
Laos
Malaysia
Myanmar
New Zealand
Nepal
Pakistan (2)
Philippines
Samoa
Solomon Islands
Sri Lanka (2)
Thailand (5)
Tonga
Vanuatu

Latin America

Argentina (5)
Bolivia
Brazil (4)
Colombia (3)
Costa Rica (2)
Dominica
Dominican Rep.
Ecuador
El Salvador
Guatemala (2)
Guyana (2)
Haiti
Honduras (2)
Jamaica (3)
Nicaragua
Panama
Peru (3)
Saint Kitts and Nevis
Saint Lucia
Suriname
Trinidad and Tobago
Uruguay (3)

North America

Bermuda
Canada (3)
United States

Near East

Afghanistan
Bahrain
Cyprus
Egypt
Iraq (2)
Israel
Jordan
Lebanon
Oman
Qatar
Saudi Arabia, Kingdom of
Somalia
Turkey (5)
United Arab Emirates
Yemen

Europe

Belgium
Germany, Fed. Rep.
Hungary (3)
Iceland
Portugal
Sweden
United Kingdom

Appendix II

CASE-STUDY EXTENSION PROGRAMMES BY EXTENSION APPROACH

The list below indicates the title, location and years of operation of each of the extension programmes submitting case-studies to FAO. A total of 24 case-studies were carried out but those from Antigua, Ireland and Pakistan were incomplete and therefore are not included in the analyses in this report.

General extension approach

(a) The China case: The agrotechnical extension service in the municipality of Shanghai; five counties, nine years (1979-1987).

(b) The case of the agricultural extension work in Cyprus; entire country, ten years (1978-1987).

(c) The case-study of innovative agricul tural extension work in the agrarian reform areas in Behirah Governorate, Egypt; ten years (1978-1987).

(d) The case of Corum and Cankiri extension work in Turkey; two provinces, eight years (1976-1984).

(e) The case of the agricultural extension work in the Tihama region of the Yemen Arab Republic; five years (1981-86).

(f) Mexico's PRODERITH: extension service in the integrated rural development programme for the humid tropics; southeast region, nine years (1979-1987).

(g) Philippine experience: participatory approach to agricultural extension among rural women; one village in llog-Bulo, San Miguel, Bulacan, three years (1983-85).

(h) Thailand case-study on effectiveness of women extension workers for farm women; ten districts of Subonbari province, four years (1985-88).

Participatory extension approach

(a) The Indonesia case: assistance to small-scale farmers, tenants and sharecroppers through agricultural extension, training, and research and field action; 70 subdistricts out of 1 609 in West Java, Central Java, Yogya-karta, East Java, Bali, West Nusa and

Tenggara, seven years (1980-86).

(b) The Rwanda case: the participatory extension project for six communities in the province of Gikongoro; five years (1984-88).

(c) The Brazil case: the agricultural extension service in the Caico region, a case-study in the north of Rio Grande de Norte; 11 municipalities, five years (1980-85).

(d) The Mali case: agricultural extension project for zones in Campagne Malienne for Textile Development (CMDT); 574 villages in the CMDT region, Koutiala, Southern Mali, nine years (1980-89).

Project extension approach

(a) The Chile case: private sector participation in technology transfer for small-scale farmers; areas of San Vincente and Las Cabras, region VI, five years (1984-88).

(b) The Colombia case: the agricultural extension project in the south-central region of Tolima El Guamo district; eight years (1981-88).

(c) The Peru case: the extension component of the Community Forestry Development Project; 404 communities of the Sierra of Peru, six years (1982-88).

(d) The Senegal case: forestry extension for agricultural extension personnel in eight districts - Fotick, Koalock and Thies or the bassin aronchidier; six years (1982-88).

Commodity specialized approach

(a) The case of Cameroon: agricultural extension with cacao producers in the SODECAO project area; Central and Southern provinces, nine years (1980-88).

Training and visit approach

(a) Case-study of the T&V extension approach followed by the reorganized extension service in Bangladesh; five districts in the northwest region, ten years (1978-1987).

(b) The agricultural extension case-study for the Hauts-Bassins region of Burkina Faso; nine years (1979-1987).

(c) The case of Kenya's national agricultural extension project in Rift Valley province; ten out of 13 districts of the Rift Valley province, six years (1981 -87).

(d) The Côte d'lvoire case: the agricultural extension project of the SATMACI; southern forestry zone, four years (1985-88).

Appendix III

GLOBAL SURVEY OF MALE AND FEMALE EXTENSION PERSONNEL BY COUNTRY

Africa

Asia and the Pacific

Latin America and the Caribbean

Near East

Europe

North America

N.B. Some of the data reported lack of disaggregation by sex; therefore, the total number for the category is greater than the total of male and female columns.

Some of the data on field-workers reported are disaggregated by types - e.g. agriculture, home economics, rural youth - and others are not. For this reason, the total number for field-workers is greater than the sum of the different categories of field-workers.

1989 Global survey: male and female extension staff in Africa

Survey respondent countries	Administrators/ supervisors			Subject-matter specialists			Field extension officers					
							Agriculture			Home economics		
	Total no	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female
Africa												
Algeria	200	200	0	200	200	0	1 000	1 000	0	-	-	-
Benin	185	170	15	339*	282	3	1 118	1 100	18	73	0	73
Burkina Faso	95	90	5	159	144	15	970	920	50	50	0	50
Burundi	20	16	4	46	42	4	-	-	-	-	-	-
Cape Verde	1	1	0	10	8	2	0	0	0	0	0	0
Congo	27	26	1	28	24	4	-	-	-	-	-	-
Côte d'Ivoire	100	96	4	161	159	2	1 117	1 117	0	0	0	0
Ethiopia	444	443	1	988	849	139	2 858	2 706	152	425	25	400
Gambia	20	15	5	25	25	0	170	160	10	0	0	0
Ghana	39	28	11	4	4	0	2 566	1 863	703	27	0	27
Guinea-Bissau	20	20	0	30	30	0	-	-	-	-	-	-
Malawi	153	141	12	546	478	68	1 471	1 471	0	134	134	0
Mali	45	43	2	158	153	5	1 177	1 160	17	3	0	3
Mauritania	11	11	0	9	9	0	53	51	2	-	-	-
Mauritius	3	3	0	2	2	0	61	60	1	0	0	0
Mozambique	121	-	-	6	4	2	0	0	0	0	0	0
Niger	24	22	2	156	145	11	270	248	22	0	0	0
Rwanda	105	103	2	317	267	50	1 605	1 559	46	0	0	0
Senegal	31	28	3	113	113	0	64	64	0	6	0	6
Sierra Leone	37	36	1	21	20	1	54	50	4	8	0	8
Sudan	16	13	3	22	15	7	290	209	81	30	29	1
Tanzania	133	128	5	204	159	45	5 085	4 488	597	250	25	225
Tunisia	119	118	1	875	807	68	-	-	-	-	-	-
Uganda	62	54	8	31	26	5	1 476	1 360	116	196	0	196
Zaire	3	3	0	1	1	0	0	0	0	0	0	0
Zambia	70	63	7	124	104	20	2 288	2 188	100	53	8	45
Zimbabwe	100	100	0	124	108	16	2 034	1884	150	0	0	0
Totals	2184	1 971	92	4 699	4 178	467	25 727	23 658	2 069	1 255	221	1 034

1989 Global survey: male and female extension staff In Africa (cont'd)

Survey respondent countries	Field extension officers (cont'd)						Total no. extension staff			Total percentage female staff
	Other types field-work			Total field-workers						
	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	
Africa										
Algeria	-	-	-	1 000	1 000	0	1 400	1 400	0	0.00
Benin	128	128	0	2 041*	1 499	150	2 565*	1 889	168	8.17
Burkina Faso	210	200	10	1 549**	1 390	159	1 803	1 624	179	9.93
Burundi	-	-	-	14**	14	0	8072	8	10.00	
Cape Verde	27	26	1	27	26	1	38	35	3	7.89
Congo	-	-	-	206*	185	21	261	235	26	9.96
Côte d'Ivoire	49	49	0	1 166*	1 166	0	1 427	1 421	6	0.42
Ethiopia	1 013	848	165	5 096**	4 312	784	6 528	5 604	924	14.15
Gambia	0	0	0	170	160	10	215	200	15	6.98
Ghana	-	-	-	2 709	1975	734	2 752	2 007	745	27.07
Guinea-Bissau	-	-	-	300	230	70	350	280	70	20.00
Malawi	0	0	0	1 605	1 605	0	2 304	2 090	214	9.29
Mali	271	271	0	1 554	1 531	23	1 757	1 727	30	1.71
Mauritania	16	16	0	77**	74	3	97	94	3	3.09
Mauritius	2	2	0	63	62	1	68	67	1	1.47
Mozambique	224	222	2	224	222	2	351	347	4	1.14
Niger	20	20	0	290	268	22	470	435	35	7.45
Rwanda	510	510	0	2115	2 069	46	2 537	2 439	98	3.86
Senegal	399	399	0	483**	477	6	627	618	9	1.44
Sierre Leone	1 249	1 195	54	1 311	1 245	66	1 369	1 301	68	4.97
Sudan	98	90	8	418	328	90	456	356	100	21.93
Tanzania	80	56	24	5 415	4 569	846	5 752	4 856	896	15.58
Tunisia	-	-	-	1 437**	1 420	17	2 431	2 345	86	3.54
Uganda	146	138	8	1 947**	1 622	325	2 040	1 702	338	16.57
Zaire	7	7	0	7	7	0	11	11	0	0.00
Zambia	33	10	23	2 374	2 206	168	2 568	2 373	195	7.59
Zimbabwe	110	92	18	2 144	1 976	168	2 368	2 184	184	7.77
Totals	4 592	4 279	313	35 742	31 638	3 712	42 625	37 712	4 405	10.46

1989 Global survey: male and female extension staff in Asia and the Pacific

Survey respondent countries	Administrators/ supervisors			Subject-matter specialists			Field extension officers					
							Agriculture			Home economics		
	Total no	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female
Asia												
Australia	33	33	0	20	18	2	16	13	3	-	-	-
Bangladesh	393	388	5	1 431	1 428	3	468	465	3	415	0	415
Bhutan	-	-	-	10	10	0	240	235	5	0	0	0
China	13 143	10514	2 629	20 941	17 865	3 076	-	-	-	-	-	-
Cook Islands	10	10	0	6	6	0	-	-	-	-	-	-
Fiji	27	26	1	6	4	2	92	85	7	-	-	-
India	1 691	1 679	12	2 878	2 862	16	48 812	48 545	267	7	0	7
Japan	900	800	100	700	600	100	9 000	8 800	200	1 800	0	1 800
Korea	401	395	6	3 204	2854	350	4 374	4 374	0	0	0	0
Laos	4	4	0	18	16	2	16	14	2	-	-	-
Malaysia	108	96	12	311	237	74	635	535	100	128	0	128
Myanmar	328	324	4	14	14	0	5 326	5 000	326	0	0	0
New Zealand	30	30	0	200	150	50	20	15	5	0	0	0
Nepal	75	75	0	58	57	1	2 070	2 047	23	-	-	-
Pakistan	183	183	0	107	107	0	518	517	1	0	0	0
Philippines	1 809	1 508	301	1 548	1 032	516	0	0	0	0	0	0
Samoa	2	1	1 .	5	5	0	25	25	0	1	0	1
Solomon Islands	11	11	0	37	34	3	-	-	-	-	-	-
Sri Lanka	124	115	9	271	215	56	535	368	167	0	0	0
Thailand	1 037	899	138	4 901	3 272	1 629	7 902	6 009	1 893	744	44	700
Tonga	3	3	0	5	5	0	28	28	0	8	0	8
Vanuatu	11	11	0	12	10	2	24	24	0	0	0	0
Totals	20 323	17 105	3 218	36 683	30 801	5 882	80 101	77 099	3 002	3 103	44	3 059

1989 Global survey: male and female extension staff in Asia and the Pacific (cont'd)

Survey respondent countries	Field extension officers (cont'd)						Total no. extension staff			Total percentage female staff
	Other types field-work			Total field-workers						
	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	
Asia										
Australia	60	60	0	76	73	3	129	124	5	3.88
Bangladesh	11 262	11 262	0	14 573**	14 155	418	16 397	15 971	426	2.60
Bhutan	0	0	0	240	235	5	250	245	5	2.00
China	-	-	-	87 781 **	70 204	17 577	121 865	98 583	23 282	19.10
Cook Islands	-	-	-	30**	30	0	46	46	0	0.00
Fiji	44	43	1	136	128	8	169	158	11	6.51
India	12 569	12514	55	61 388	61 059	329	65 957	65 600	357	0.54
Japan	0	0	0	10 800	8 800	2000	12 400	10 200	2200	17.74
Korea	0	0	0	4 374	4 374	0	7 979	7 623	356	4.46
Laos	-	-	-	16	14	2	38	34	4	10.53
Malaysia	2 209	1 845	364	2 972	2 380	592	3 391	2 713	678	19.99
Myanmar	0	0	0	5 326	5000	326	5 668	5 338	330	5.82
New Zealand	0	0	0	20	15	5	250	195	55	22.00
Nepal	4	2	2	2 074	2 049	25	2 207	2 181	26	1.18
Pakistan	3 154	3154	0	3 672	3 671	1	3 962	3 961	1	0.03
Philippines	12 087	6 130	5 957	12 087	6 130	5 957	15444	8 670	6 774	43.86
Samoa	0	0	0	26	25	1	33	31	2	6.06
Solomon Islands	202	200	2	202	200	2	250	245	5	2.00
Sri Lanka	3 598*	1 391	946	4 133*	1 759	113	4 528*	2 089	1 178	36.06
Thailand	0	0	0	14 684**	10 801	3 883	20 622	14 972	5 650	27.40
Tonga	0	0	0	36	28	8	44	36	8	18.18
Vanuatu	0	0	0	24	24	0	47	45	2	4.26
Totals	45 189	36 601	7 327	224 670	191 154	31 255	281 676	239 060	41 355	14.75

1989 Global survey: male and female extension staff in Latin America

Survey respondent countries	Administrators/ supervisors			Subject-matter specialists			Field extension officers					
							Agriculture			Home economics		
	Total no	No. male 1	No. female	Total no.	No. male.	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female
Latin America												
Argentina	68	63	5	34	27	7	387	376	11	119	47	72
Bolivia	8	8	0	30	30	0	80	79	1	-	-	-
Brazil	250	242	8	525	444	81	3 258*	921	22	334	0	334
Colombia	65	60	5	462	428	34	517	509	8	53	21	32
Costa Rica	74	70	4	184	157	27	150	150	0	41	0	41
Dominica	11	10	1	1	1	0	31	29	2	0	0	0
Dom. Republic	50	45	5	135	121	14	600	550	50	10	0	10
Ecuador	30	28	2	-	-	-	184	184	0	-	-	-
El Salvador	5	5	0	82	82	0	299	294	5	60	0	60
Guatemala	46	45	1	175	173	2	683	683	0	92	0	92
Guyana	21	19	2	5	4	1	86	76	10	-	-	-
Haiti	24	24	0	45	40	5	490	470	20	30	0	30
Honduras	39	25	14	9	9	0	309	289	20	120	0	120
Jamaica	124	115	9	16	12	4	121	105	16	11	0	11
Nicaragua	28	28	0	24	20	4	0	0	0	0	0	0
Panama	-	-	-	71	63	8	565	565	0	5	0	5
Peru	14	12	2	89	70	19	-	-	- "	-	-	-
St Kitts and Nevis	5	5	0	4	4	0	14	12	2	0	0	0
St Lucia	13	12	1	8	6	2	42	34	8	1	0	1
Suriname	13	13	0	6	5	1	95	92	3	12	0	12
Trinidad and Tobago	25	21	4	12	11	1	132	113	19	0	0	0
Uruguay	13	12	1	37	31	6	38	34	4	-	-	-
Totals	926	862	64	1 954	1 738	216	8 081	5 565	201	888	68	820

1989 Global survey: male and female extension staff in Latin America (cont'd)

Survey respondent countries	Field extension officers (cont'd)						Total no. extension staff			Total percentage female staff
	Other types field-work			Total field-workers						
	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	
Latin America										
Argentina	169	157	12	887**	778	109	989	868	121	12.23
Bolivia	-	-	-	80	79	1	118	117	1	0.85
Brazil	400	301	99	3 992*	1 222	455	4 740*	1 881	544	22.43
Colombia	1 218	1 138	80	1 788	1 744	120	2 315	2 156	159	6.87
Costa Rica	89	84	5	343**	296	47	601	523	78	12.98
Dominica	2	1	1	33	30	3	45	41	4	8.89
Dom. Republic	55	38	17	665	588	77	850	764	96	11.16
Ecuador	60	60	0	244	244	0	274	272	2	0.73
El Salvador	-	-	-	359	294	65	446	381	65	14.57
Guatemala	3 864	2 724	1 140	4 778**	3 436	1 232	4 889	3 654	1 235	25.26
Guyana	-	-	-	86	76	10	252	222	30	11.90
Haiti	71	60	11	591	530	61	670	604	66	9.85
Honduras	20	20	0	456**	316	140	504	350	154	30.56
Jamaica	-	-	-	288**	260	28	428	387	41	9.58
Nicaragua	630	563	67	630	563	67	682	611	71	10.41
Panama	10	10	0	622	599	23	693	662	31	4.47
Peru	-	-	-	20**	20	0	1 623*	102	21	17.07
St Kitts and Nevis	0	0	0	14	12	2	23	21	2	8.70
St Lucia	0	0	0	43	34	9	64	52	12	18.75
Suriname	11	8	3	118	100	18	137	118	19	13.87
Trinidad and Tobago	21	21	0	153	134	19	190	166	24	12.63
Uruguay	-	-	-	107**	99	8	157	142	15	9.55
Totals	6 620	5 185	1 435	16 297	11 454	2 494	20 690	14 094	2 791	16.53

1989 Global survey: male and female extension staff in the Near East

Survey respondent countries	Administrators/ supervisors			Subject-matter specialists			Field extension officers					
							Agriculture			Home economics		
	Total no	No. male	No. female	Total no.	No. male.	No. female	Total no..	No. male	No. female	Total no.	No. male	No. female
Near East												
Afghanistan	61	61	0	30	24	6	556	556	0	3	0	3
Bahrain	1	1	0	2	2	0	6	6	0	0	0	0
Cyprus	19	18	1	7	7	0	316	316	0	7	0	7
Egypt	642	642	0	-	-	-	3 834	3 834	0	50	0	50
Iraq	34	22	12	59	36	23	25	22	3	16	4	12
Israel	36	34	2	85	77	8	-	-	-	-	-	-
Jordan	13	13	0	9	9	0	73	63	10	-	-	-
Lebanon	1	1	0	11	11	0	42	42	0	0	0	0
Oman	4	4	0	5	5	0	108	108	0	0	0	0
Qatar	2	2	0	0	0	0	10	10	0	0	0	0
Saudi Arabia	26	26	0	31	31	0	-	-	-	-	-	-
Somalia	14	13	1	16	11	5	-	-	-	-	-	-
Turkey	1 614*	434	28	3 620*	156	18	45	37	8	0	0	0
United Arab Emirates	1	1	0	5	5	0	83	83	0	0	0	0
Yemen	18	15	3	27	23	4	81	76	5	0	0	0
Totals	2 486	1 287	47	3 907	397	64	5179	5 153	26	76	4	72

1989 Global survey: male and female extension staff in the Near East (cont'd)

Survey respondent countries	Field extension officers (cont'd)						Total no. extension staff			Total percentage female staff
	Other types field-work			Total field-workers						
	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	
Near East										
Afghanistan	100	100	0	659	656	3	750	741	9	1.20
Bahrain	2	2	0	8	8	0	11	11	0	0.00
Cyprus	5	5	0	328	321	7	354	346	8	2.26
Egypt	400	0	400	4 284	3834	450	4 926	4 476	450	9.14
Iraq	68	25	43	123**	53	70	216	111	105	48.61
Israel	-	-	-	221**	201	20	342	312	30	8.77
Jordan	-	-	-	73	63	10	95	85	10	10.53
Lebanon	0	0	0	42	42	0	54	54	0	0.00
Oman	0	0	0	108	108	0	117	117	0	0.00
Qatar	0	0	0	10	10	0	12	12	0	0.00
Saudi Arabia	-	-	-	335**	335	0	392	392	0	0.00
Somalia	-	-	-	223**	216	7	253	240	13	5.14
Turkey	-	-	-	10 834**	549	304	16 068*	1 139	350	23.51
United Arab Emirates	0	0	0	83	83	0	89	89	0	0.00
Yemen	0	0	0	81	76	5	126	114	12	9.52
Totals	575	132	443	17412	6 555	876	23 805	8 239	987	10.70

1989 Global survey: male and female extension staff in Europe

Survey respondent countries	Administrators/ supervisors			Subject-matter specialists			Field extension officers					
							Agriculture			Home economics		
	Total no	No. male 1	No. female	Total no.	No. male.	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female
Europe												
Belgium	42	41	1	9	8	1	-	-	-	-	-	-
Finland	52	32	20	396	309	87	176	169	7	86	0	86
Germany, Fed. Rep.	1 028	948	80	-	-	-	3 294	3 294	0	788	0	788
Hungary	53	45	8	109	74	35	143	112	31	0	0	0
Iceland	1	1	0	18	18	0	38	36	2	0	0	0
Portugal	65	60	5	150	100	50	1 215	935	280	-	-	-
Sweden	110	100	10	60	40	20	520	450	70	0	0	0
United Kingdom	179	171	8	80	74	6	1 309	1.113	196	-	-	-
Totals	1 530	1 398	132	822	623	199	6 695	6 109	586	874	0	874

1989 Global survey: male and female extension staff in Europe (cont'd)

Survey respondent countries	Field extension officers (cont'd)						Total no. extension staff			Total percentage female staff
	Other types field-work			Total field-workers						
	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	
Europe										
Belgium	-	-	-	109	102	7	160	151	9	5.63
Finland	-	-	-	262	169	93	710	510	200	28.17
Germany, Fed. Rep.	700	700	0	4 782	3994	788	5 810	4 942	868	14.94
Hungary	34	22	12	253**	204	49	415	323	92	22.17
Iceland	0	0	0	38	36	2	57	55	2	3.51
Portugal	50	50	0	1 265	985	280	1 480	1 145	335	22.64
Sweden	20	15	5	540	465	75	710	605	105	14.79
United Kingdom	135	110	25	1444	1 223	221	1 703	1468	235	13.80
Totals	939	897	42	8 693	7178	1 515	11 045	9 199	1 846	16.71

1989 Global survey: male and female extension staff in North America

Survey respondent countries	Administrators/ supervisors			Subject-matter specialists			Field extension officers					
							Agriculture			Home economics		
	Total no	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female
North America												
Bermuda	5	4	1	9	6	3	8	4	4	-	-	-
Canada	24	20	4	127	114	13	63	57	6	-	-	-
United States	906	589	317	4 570	3 459	1 111	3 703	3 345	358	2 768	44	2 724
Totals	935	613	322	4706	3 579	1 127	3 774	3 406	368	2 768	44	2 724

1989 Global survey: male and female extension staff in North America (cont'd)

Survey respondent countries	Field extension officers (cont'd)						Total no. extension staff			Total percentage female staff
	Other types field-work			Total field-workers						
	Total no.	No. male	No. female	Total no.	No. male	No. female	Total no.	No. male	No. female	
North America										
Bermuda	-	-	-	8	4	4	10	5	5	50.00
Canada	1	-	1	64	57	7	200	179	21	10.50
United States	3 193	1 648	1 545	9 664	5 037	4 627	15 140	9 085	6 055	39.99
Totals	3 194	1 648	1 546	9 736	5 098	4 638	15 350	9 269	6 081	39.62