CHRISTIAN RELIEF & DEVELOPMENT ASSOCIATION

TRAINING OF TRAINERS ON SUSTAINABLE AGRICULTURAL DEVELOPMENT

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Food Security beyond 2000

Contribution by the NGDO-EC Liaison Committee to the debate on policies for food security

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Food Security beyond 2000: Executive Summary

1. The message of this paper is that food security does not flow automatically from macro-economic adjustment and poverty alleviation. The establishment of household food security is an essential building-block in the adjustment process and the anti-poverty campaign. The paper has been written to promote more dialogue between development NGOs South and North and to contribute to the European Union's review of food security during 1994.

2. Food security is a product of an adequate supply of food (food production) and of access to it (food distribution). For the majority rural population in developing countries, farming and related activity represent the only realistic guarantee of their food security.

3. Food security has to be considered at several levels: national, district, household and individual. All food security policies must answer the question "who is food insecure and why?" The vulnerable include poor farmers, pastoralists and informal sector employees. The food insecure are increasingly landless, women, urban, elderly and African. Yet it is not only in food-deficit areas of Africa that food insecurity persists: it can co-exist with abundance.

4. **Food production:** food production has more than kept pace with population growth during the last 30 years (except in Africa) but this does not address the problem of food insecurity at household level. Support for small farmers, sustainable agriculture and land reform are central to the re-establishment of food security. If smallholder farming is denied, agriculture may be diverted to large-scale production for the better-off but who will then produce food for the poor? Support to small farmers needs to prioritise women, who are responsible for every phase of the food cycle.

5. Three main types of farming have been tried in developing countries: traditional farming, modern farming and sustainable agriculture. Sustainable agriculture is based on traditional techniques of mixed farming (crops and animals), crop rotations and intercropping. It values the traditional knowledge of farmers and insists on farmers' participation in planning and testing solutions. Only sustainable agriculture has the potential to feed the poor in the long term.

6. In the debate about cash crops or food crops, informed choice on the part of farmers is the key. Small farmers are at less risk from the hazards of trade if they grow more of the food crops needed in their own countries (local food crops should become cash crops). Poor people need land and secure control over the use of the land. The value of land reform has been recognised but most government land reforms have failed, owing to ineffective implementation and entrenched landed interests. Adjustment programmes should incorporate land reform.

7. **Food distribution:** in the family, women and children are the most food insecure. They are also the most exploited when they try to earn extra income in the informal sector. In industrialised countries it may be possible to safeguard food security by increasing the incomes of the poor. This is not so true of mainly agricultural economies where few alternative jobs or income sources are on offer. Increasing the access of the rural poor to productive resources is a more reliable guarantee of their food security than purchasing power. Measures to assist the hungry have been both too short-term and too long-term. A more medium-term approach to hunger reduction is being recognised as necessary as a contribution to long-term poverty alleviation. This shifts the balance towards equity and entitlement solutions.

8. Reliance on trade to achieve national food security is not usually an appropriate policy for developing countries: dependence on food imports creates vulnerability to world markets and prices. In reality trade flows are controlled more by powerful corporations than by governments. We urge a greater degree of self-reliance in food production, at national or regional level.

9. World farm prices have been driven down by the EU's Common Agricultural Policy and by US policies which have the same effect of dumping subsidised farm exports and competing with developing country farmers. We have provided the European Commission with a paper on the impact assessment mechanisms we believe are needed to monitor the effects of the CAP on developing countries. GATT should recognise the right of all developing countries to take trade measures to protect their food security.

10. Northern governments must show greater political will to solve developing countries' external

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debt problems, which are a main force behind Structural Adjustment Programmes. SAPs have often worked against the interests of food security. It should be a principle of macro-economic adjustment that there are no net losers among the hungry. Measures to maintain the access of the hungry to food should be in place before the adjustment reform is instituted. Subsidies on basic foods consumed by the poor should be retained wherever possible.

11. Targeted emergency and project food aid can be valuable but affects only a small proportion of the food insecure. Recent recommendations for improvement of food aid include: more local purchases and triangular operations, better integration of relief and development measures, better integration of food aid and financial aid (including monetisation) and a new code of conduct or international delivery mechanism. In the prevention of famine, the greatest contribution donors can make is to help build decentralised capacities to withstand crises in food-deficit countries.

12. Food security requires a combination of policies and is a country-specific challenge. Food security programmes supported by the EU, FAO and the World Bank are an acknowledgement that macro-economic improvements are not sufficient to achieve food security at household level. Specific measures of policy adjustment and project support are needed. The paper concludes with recommendations for 30 such measures and with a call for the democratisation of food security. To improve the participation of the poor in decision-making, food security councils composed of producer and consumer organisations should work with more accountable local and central government institutions in each country to devise strategies for the promotion of local production and distribution.

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1. Introduction

1.1 In the early 1980s policy-makers gave priority attention to food security. Over the last few years this attention has been replaced by a concern for macro-economic adjustment and poverty alleviation. Neither of these approaches has reduced the absolute numbers of hungry people. Governments and international institutions are embarking on a new examination of this policy failure, in particular asking how food security is related to their wider efforts to defeat poverty and promote development. The message of this paper is that food security does not flow automatically from macro-economic adjustment and poverty alleviation. The establishment of household food security is rather an essential building-block in the adjustment process and the anti-poverty campaign. The attack on poverty and underdevelopment needs to begin by enabling the hungry to feed themselves.

1.2 In 1991 the Liaison Committee produced a text **An Integrated Approach to Food Security,** which was discussed with EU and UN institutions. Reactions to that text, as well as trends in policy during the last three years, have encouraged us to prepare this new exploration of the conditions necessary for household food security. On the one hand, a text is needed which will promote more dialogue between development NGOs South and North, particularly on the nature of projects to be supported. On the other hand, the European Union institutions are to undertake a review of food security during 1994. This paper is a contribution to those debates.

1.3 Our previous text concluded that food security was determined most of all at the level of the household or family and acknowledged that poverty was the main cause of food insecurity. Food security is a product both of an adequate supply of food (**food production**) and of access to it (**food distribution**). Stability of supply and access is of major importance. Food security depends on assuring secure and sustainable livelihoods for poor people. For the majority rural populations in developing countries, farming and related activity represent the only realistic guarantee of their food security.

1.4 The paper begins with a review of the nature of food security and then analyses the conditions of food production and food distribution which need to be improved. After a brief look at the response of governments and institutions, we set out some ideas for action which both they and NGDOs (non-governmental development organisations) South and North might take.

2. What is food security and who is insecure?

2.1 A definition

The World Bank defines food security as being: "Access by all people at all times to enough food for an active, healthy life. Its essential elements are the availability of food and the ability to acquire it... There are two kinds of insecurity: chronic and transitory. Chronic food insecurity is a continuously inadequate diet caused by the inability to acquire food. It affects households that persistently lack the ability either to buy enough food or to produce their own. Transitory food insecurity is a temporary decline in a household's access to enough food. It results from instability in food prices, food production, or household incomes - and, in its worst forms, it produces famine." Food security is not given once for all. Among the poor it may come and go, and they often suffer shocks and accidents to their prospects for feeding themselves.

2.2 Levels of food security

The World Bank definition indicates that food security should apply to "all people". Putting this into practice involves looking at food security on several levels:

- national (where it is strongly influenced by the world economic situation, including Northern economic policies);
- district, where marketing and transport problems in developing countries often inhibit effective implementation;
- household (since the household is the basic unit for consumption and, commonly in developing countries, production, the family unit as such may be a positive factor in food security);
- individual (because gender inequalities mean that individuals, usually women or children, are often food-insecure within households which appear to have enough food).

All food security policies must answer the question "who is food insecure and why?"

2.3 Who are the Food Insecure?

Estimates range from 300 million to 1 billion people worldwide, according to the criteria used, but this imprecision should not stand in the way of the search for measures to reduce food insecurity. Typically, the vulnerable include farmers on marginal lands, pastoralists with restricted grazing areas and informal sector/services employees. Because material resources are scarce and because

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their skills, capabilities and knowledge undervalued and not updated, these groups are often, unjustly, termed "resource-poor". Compared with the 1970s more of the food insecure are now landless, women, urban, elderly and African. Different strategies are needed for each group. Joachim von Braun of IFPRI sees food insecurity as, "the outcome of an interaction between environmental and socio-economic factors....and a failure of policy to deal with them." He blames regression in agriculture, constraints in transport infrastructure and weak popular participation - not simply wars and drought - for the special situation in Africa. Yet it is not only in food-deficit areas of Africa that insecurity persists. In the Philippines, home to the Green Revolution's International Rice Research Institute, 18% of rice needs are now imported and average food consumption continues to decline despite increases in productivity. "The greatest irony," according to Francisco Lara of the Philippine Peasant Institute, "is that the worse off children are those in... the country's food basket areas: Southern Mindanao where rice is grown abundantly and where the huge banana and pine-apple plantations are situated and Central Luzon, the country's rice granary... 70% of our population are deficient in energy food intake."

2.4 Indicators of Food Insecurity

Food insecurity is normally identified through either nutritional or socio-economic indicators. Nutritional assessment may underestimate need because it is a "trailing" indicator which identifies only those who are already malnourished, not those who are poor or vulnerable. In his analysis of **Food Insecurity in Northern Sudan** (1989), Simon Maxwell draws distinctions between malnutrition, poverty and vulnerability. Malnutrition is the most unequivocal indicator of food insecurity, as it is associated with a sudden and dramatic decline in food intake. However, it is possible to be both poor and vulnerable without manifesting the physical signs of malnutrition. It is also possible for richer peasants to be vulnerable to food insecurity as a result of seasonal and micro-economic obstacles (failures in the food cycle and cultural constraints), even though they may be neither malnourished nor poor.

2.5 Coping Strategies

These strategies include income-earning activities such as casual or seasonal labour and petty trade; disposing of stores of grain, livestock or other property; depending on others by borrowing from friends or neighbours; changing dietary habits by eating less or eating wild foods; and migration to find work as a strategy of last resort. The objective of coping strategies is not only to ensure present food supply but also future capacity to produce. Studies of peasant behaviour show that peasants are prepared to expose themselves to physical risk during famines by going hungry rather than eating seed or selling oxen and tools because they need to cultivate. At this stage coping can become indistinguishable from suffering. Peasants whose crop production and animal husbandry is always insufficient have to seek additional means of support every year. It would be more exact to group the activities they use to sustain themselves as semi-subsistence livelihoods. Northern literature has tended to ascribe to coping strategies an almost magical capacity to enable peasants to survive. In the case of the poorest, many so-called coping strategies are damaging to household sustainability and increasingly unviable. Food security policy should be based on the need to support semi-subsistence livelihoods rather than on a concern to leave the field to coping strategies.

2.6 Food Security in the Past

Has food insecurity always been with us? How have people coped in the past? As Europe acquired its colonies overseas and especially when it drafted labour into the Industrial Revolution, reliance on domestic farming gave way to greater dependence on food from abroad. But the wars of the 20th century exposed the vulnerability of Europe's food trade. 1945 found the continent far from self-sufficient in food products and in need of the Marshall Plan of US economic aid to survive. The desire to recover its food self-sufficiency gave birth to Western Europe's Common Agricultural Policy (CAP) which has so successfully overshot its production targets that it survives in its present form only at the expense of other regions of the world (its effects are considered in more detail in para 4.8). The South also enjoyed a better balance in the past. According to 14th century Arabian sources, abundant food was available in the West African kingdoms of Mali and Songhai, with no mention of famine or malnutrition. But research has detected major drought periods in these Sahelian regions since the 17th century; it can be assumed that the impact on food supplies was less than today because of lower population densities. Where population density was high, as in parts of pre-Hispanic Mexico, research has discovered ancient cases of soil erosion and degradation. During colonial times, the most fertile soils in the Tropics were put under export crops. Food production was forced to take place on marginal land with increased liability to soil erosion, inundation or desertification. This socio-political impact on farming in the South rendered it more vulnerable to adverse natural conditions like drought spells or erratic rains.

3. Food Production

3.1 How much is needed?

Analysis by the World Bank shows that global food production has more than kept pace with population growth during the last 30 years. World **per capita** cereals consumption has increased by 20% since 1960

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and in developing countries by 36%. Asia has seen the greatest improvement. However, Africa has been largely left behind, with annual food production increases in the 1980s averaging less than 2% while population grew by more than 3% per annum. Philip Raikes warns against placing too much reliance on the weak official statistics of food production shortfalls in Africa (these may indicate less a decline in production than a decline in the proportion of food officially marketed), but there is no doubt that Africa is faring worse than other regions. Per Pinstrup-Andersen of IFPRI argues that Sub-Saharan Africa will need an additional 50 million tonnes of grain by 2000 (out of 90 million required worldwide) because of population growth. Even the most optimistic projections of the World Bank's 1989 Long-Term Perspective Study (based on increased production and a lower birth-rate) show Africa requiring a doubling of its present level of cereal imports by 2010. But such global aggregates do not address the problem of food insecurity at household level, where supply and access need to increase. And the ability of production to keep pace with population growth suggests that the answer to food insecurity does not lie in demographic policy: as the Liaison Committee's 1992 booklet **Women, Human Rights and Reproduction** illustrates, population policy is a function of women's health, education and human rights.

3.2 What type of food is needed?

Chronic food insecurity, as Walter Kennes points out, can be caused by a lack of overall food quantity, normally measured in calorie intake (energy), or by insufficiencies of particular nutrients. Often the satisfaction of overall calorie needs implies that the needs for nutrients are covered as well. However, if the diet lacks variety, the intake of nutrients such as iron, iodine and vitamins may not be guaranteed. This type of malnutrition is often the result of a lack of nutritional education and the poor, whose choices in household spending and consumption patterns are so restricted, are particularly vulnerable to it. Increased household income may be spent on foods of low nutritional value or on non-food needs. Female-controlled income is more likely to be spent on food and nutrition than male-controlled income. The EU Development Council resolution on **Food Security Policy in Sub-Saharan Africa** in November 1988 urged that the consumption of local products should be encouraged, by promotion campaigns and by improving food processing through appropriate technology.

3.3 Who Produces the Food?

"Deprivation and hunger depend less on how much is produced, and more on who produces and where, and who has the means to buy food" (Robert Chambers, University of Sussex). In this analysis support for **small farmers, sustainable agriculture and land reform** are central to the re-establishment of food security. Six out of ten families in the South work the land. A quarter of [illegible] million families) do not own the land they work. They are tenants, wage labourers or sharecroppers, overwhelmingly poor. Many smallholders who own land are forced to cultivate tiny plots of infertile soil or steep slopes. The agribusiness companies and landowners who own the rest of the land are guided by the market (internal or external) in deciding what and how to grow; their choices do little for food security if the local poor are unable to express their needs through "effective demand" (ie money). If smallholder farming is denied opportunity and remuneration, agriculture may be diverted to large-scale production for the better-off in the cities and overseas, **but who will then produce food for the poor?**

3.4 Women's Rôle in Food Production

Women are responsible for every phase of the food cycle: **the food production phase,** including tilling, planting, weeding and harvesting staple foods; **the post-harvest phase,** storing and processing food; **the trading phase,** selling food and drink preparations in the market or through small vendors; **the daily meal phase,** preparation of all family meals including the gathering of fuelwood and water; **the nursing phase,** caring for children, the elderly and the sick, often using medicinal herbs and other produce from home gardens to supplement the diet. A dramatic feminisation of poverty is taking place. Poor women face all the obstacles faced by poor men and many more including: lower education, lack of access to credit and technical assistance, and sometimes the entire burden of family feeding when their men migrate in search of work. Women have individual title to less than 1% of the world's land, though in many societies they do the majority of farm work. Support to small farmers needs to include help with women's practical needs as well as promotion of policy measures and social values that improve their position in the household and society.

3.5 By what technologies?

Three main types of farming have been tried in developing countries: traditional farming, modern farming and sustainable agriculture. A British Commission, evaluating agriculture in India at the beginning of the 20th century concluded:

"That in many places, the system of agriculture followed attained a very high standard is a matter of common knowledge; the cultivation of rice in the deltas, for example, has reached a marked degree of perfection and the wisdom of many agricultural proverbs stands unchallenged by research. The careful terracing of hillsides, the various methods of irrigation from wells and tanks, the construction of accurately designed channels from the streams to the fields and similar achievements in improving land disclose skill, ingenuity and patient labour."

Traditional agriculture and rural life probably were never as pleasant, democratic and affluent as some romantic aspirations tend to assume. It seems

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unrealistic to promote these traditions as a model for future agricultural development in the South. But a look at the old farm practices can show the ability, creativity and technical skills of indigenous people and perhaps allow them a more involved and decisive rôle in their own development. Modern farming, like that promoted by the Green Revolution, was an attempt at a technical solution which left the problem of equity unsolved. It favoured those who already had land; it favoured wheat and rice farmers, rather than the poorest families growing dryland crops like sorghum and millet; it made farmers dependent on the multinational companies' packages of seeds, fertilisers and pesticides needed for success with the new high-yielding varieties.

3.6 Sustainable agriculture

Sustainable agriculture has received the support of the world's governments in Chapter 14 of Agenda 21, adopted by the Earth Summit. Our 1991 text tried to define it:

"Sustainable agriculture is designed to respond both to the needs of the population and to natural and ecological constraints in a given region. Its objective is an optimum yield of agricultural products on a sustained and long-term basis, without destroying the environment. The priority is to identify and develop the resources available in the region, such as labour, water, nutrients rather than to rely on external inputs. This does not exclude the use of technical and synthetic methods from foreign sources, but their level must be kept to a minimum in order that these external inputs endanger neither the natural environment nor the physical and economic integrity of the population. Agriculture will be truly sustainable only if the social and cultural dimension of those who put it into practice is totally integrated into the process and if the decisions on implementation belong to them."

Sustainable agriculture is based on traditional techniques of mixed farming (crops and animals), crop rotations and intercropping. It values the traditional knowledge of farmers, using science to build on it, and insists on farmers' participation in planning and testing proposed solutions. People's participation is the rationale for the training workshops in sustainable agriculture and South-South exchange projects promoted by some NGDOs, enabling partners to meet and decide what sustainability means under their conditions. No single strategy or technology is appropriate to all areas and the degree of change to ecofarming should always be the farmers' own choice.

3.7 Does sustainable agriculture pay?

Low external-input sustainable agriculture has been criticised on the ground that it does not produce enough. But it is not a zero-input approach; it is a high **internal**-input strategy (labour, technical skills and on-farm resources). Combined systems of organic management and deliberate use of agrochemicals achieve both the highest yields and the highest economic return. It makes little sense to base production techniques on modern farming alone, but it also makes little sense totally to refrain from the yield-increasing potential of chemical inputs, where these are economically viable. A UNDP study (1992) of 20 organic projects in developing countries concludes: "the question is whether organic agriculture presents an attractive alternative to current non-sustainable practices. The answer is a qualified "yes". Both in high potential areas and marginal lands, organic agriculture offers agronomically feasible solutions for problems of environmental sustainability. This feasibility includes a positive micro-economic effect for most of the producers involved, and possibly leads to positive effects on regional and national economies as well." **Only** sustainable agriculture has the potential to feed the hungry in the long term.

3.8 Biodiversity and biotechnology

Virtually all the crops consumed in Europe owe their genetic origin to the South. It is in smallholder farmers' fields in developing countries that the biological resources necessary to maintain world agriculture are found. Peasant farmers in developing countries provide the genetic basis for the North's US$17 billion plant breeding industry, but work carried out at local level by farmers and community organisations goes unrewarded. Patent systems in the North are not designed to recognise the rôle of this informal sector. Member states of FAO have formally accepted the concept of farmers' rights; but the concept needs to be redefined, strengthened and implemented. There is a need for political recognition of the farmer's right to save, choose and produce her/his own seeds, followed by financial support for farmer innovation in seed conservation and production. The main focus of biotechnology research to date has been on a few economically important cash crops and higher sales of agrochemicals. Given the costs of research and the nature of control of the industry, it seems unlikely that biotechnological research will bring many improvements in the staple foods of the poorest.

3.9 Production for whom? Self-reliance or market orientation?

In the debate about cash crops or food crops, two questions need to be asked: "Who benefits? Is it multinational companies, or large landowners, or small farmers?" and, "Is there the right balance between cash crops and food crops?" Joint promotion of food crops and cash crops may be part of the answer; for example, in the Mumias sugar scheme in Kenya, the smallholders who grow sugar for sale are required to keep 50% of their land under food production. Informed choice on the part of the farmers is a key to this question, since smallholders so often lack market information. But, even where small farmers are the beneficiaries, there are dangers in

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reliance on markets. International commodity prices continue to fall or at least remain unreliable, and for many tropical products synthetic substitutes are being developed. During the 1984 drought, coffee farmers around Mount Kenya, despite having a good harvest, suffered from food shortages to a greater extent than subsistence farmers. The food produced was eaten largely by the producers themselves and not sold on the market. Despite their higher purchasing power, the coffee farmers were unable to find enough food to buy. A wheat farmer can always survive on her/his produce by eating it, while the coffee farmer is left with an uneatable cash crop when marketing opportunities disappear. Small farmers are at less risk from the hazards of trade if they grow more of the food crops needed in their own countries (local food crops should become cash crops).

3.10 The Scope for Agrarian Reform

Farmers with secure access to fertile land enjoy a number of advantages: (i) they do not have to pay to hire land, and they feel more confident in investing in its care and improvement; (ii) they have more chance of surviving a crisis, because they have reserves to sell or mortgage; (iii) they are less dependent than the landless on the availability of work or the goodwill of others. The value of land reform has been widely recognised but most government land reforms have failed to transfer much land or improve the lot of the food insecure, owing to ineffective implementation and entrenched landed interests. The power of landlords to subvert the process has to be offset, through peasant organisation and government action. Land reform has seen some successes eg in China and some states of India. Land policies to address food insecurity would respond to these needs:

- people need land
- and secure control over the use of the land;
- that means organisation
- and appropriate techniques
- which may require investment support for the poor
- and protection internationally for the country's farmers.

Frances Stewart recommends that adjustment programmes should incorporate land reform: "Land tenure systems should be reviewed in each country to assess their implications for efficiency and equity. In some countries such a review might argue for an immediate land redistribution. In others, changes are needed to prevent future inequalities emerging, by instituting land ceilings, and periodic reviews leading to land redistribution."

3.11 Environmental Change and Food Production

Most peasants would choose to follow ecologically sound strategies. But, if they have too little land, or are pushed back onto marginal land, they too can contribute to land degradation. As the 1992 World Development Report points out, "The poor are both victims and agents of environmental damage." The pursuit of food security forces many poor people to resort to land use practices which are ecologically disastrous. This causes such problems as soil erosion, desertification, deforestation, degradation of pastures and loss of wildlife. These can threaten food security in the areas affected and even force people to leave the land. The numbers of environmental refugees increase year by year. To give one example of the spiral effects, degraded pastures normally leave animals in poor physical condition, preventing their owners from getting a good price at the market. In order to compensate for loss of income, they feel compelled to increase their herds, resulting in even more intense pressure on pastoral land. Drought and desertification particularly affect rainfed agriculture.

4. Food Distribution

The World Bank definition of food security incorporates the widely accepted view (after Amartya Sen) that food security lies both in an adequate supply of food being available and in households having access to food. People gain access to food through a bundle of resources (stocks, assets, claims and incomes) known as "entitlements". A loss of entitlements, through unemployment for example, will cause a household to go short of food, even where there is no decline in overall food supply.

4.1 Distribution of food within the family

Distribution of food inside the family follows cultural patterns which guarantee adult men a full ration. The remaining food is distributed to children and to women. Women and children are the most food insecure, especially among the poor. Women adhere to traditional norms of food distribution not only because of tradition but because of their higher sense of commitment to the survival of the family. Nutritional education for women improves the food situation of the family. In Sudan after the 1985 famine a mother's education was found to be twice as effective in maintaining a child's nutrition level as a father's education.

4.2 Distribution through the informal economy

The informal economy includes a broad range of activities undertaken by poor families to earn extra income as well as food in exchange for their services. Children and women are the most prominent in the

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informal sector but also the most abused among the poor because of the lack of legislation protecting children and women from exploitation. Small vendors in local markets, servants and child labour are typical among the jobs taken by the rural poor: prostitution and child street crime are extreme but growing examples in the cities. The informal economy also includes trade in food. Philip Raikes believes that controlled marketing and low producer prices in Africa were responsible for the withholding of food from official marketing boards: "Holding official producer prices down leads to diversion of produce onto unofficial markets, and urban shortages on official markets." This increases the pressure on marketing boards to seek food imports. Unofficial food trade across borders is a widely acknowledged component of food marketing in Africa.

4.3 Distribution through purchasing power?

Our 1991 text recommended that access to food by the poor should be increased through incomes as well as other rural assets. Clearly, there are benefits from diversification of income sources in the rural areas, to include more off-farm employment and better local services. But there are dangers inherent in any attempt to solve the problems of food insecurity and rural poverty through industrialisation and urbanisation. Even in the North, we have seen that industrialisation promotes cheap food policies to keep employers' labour costs down; in the South an over-emphasis on buying food rather than producing it may further weaken rural production systems. The less the people work the land and produce food, the more purchasing power is needed, because urban people have to pay not only for the food itself, but for transport, processing and conservation as well. Where it is difficult to increase purchasing power, food security may still be attainable through the enabling of people to remain in rural areas, where their needs are less. In industrialised countries it may be possible to safeguard food security by increasing the incomes or food rations of the urban poor. But this is less possible in mainly agricultural economies where few off-farm jobs or income sources are on offer. We believe that increasing the access of the hungry to productive resources is a more reliable guarantee of their food security than income or purchasing power. Their insecurity is the result of their lack of control over resources.

4.4 Targeting support to the rural poor

In this analysis food security requires not only a favourable macro-economic context of policies designed to overcome poverty, but also a specific emphasis on the conditions at household (micro) level which enable hungry families to grow or acquire enough food. The reason for specific measures to promote sustainable agricultural production by small farmers in developing countries is not simply to increase the supply of food but to maintain their security. The same intervention can enhance both the supply of food and access to it by the poorest groups. Targeting support to food strategies and the needs of the rural poor is essentially a distributional strategy: to keep resources with the poor and in the rural areas. Without such intervention at micro level both urbanisation and the gap within developing countries between rich and poor seem set to increase.

4.5 The timescale of measures to build food security

Too high a proportion of the measures taken to assist the hungry have been short-term and responsive providing insufficient basis to help them escape from chronic food insecurity. But, when they have looked for longer-term assistance, the hungry have also been told to tighten their belts and wait for the effects of structural adjustment and poverty alleviation programmes. It is therefore refreshing to see the emphasis which the **Issues Paper for the World Bank conference Overcoming Global Hunger (1993)** places on the more medium-term nature of specific food security measures. If we are to be successful in overcoming hunger, we need to focus on priority and policy actions to reduce hunger now even if all other aspects of poverty are not resolved. Such an approach would concentrate on hunger reduction, long before long-run solutions to poverty are achieved: "This inevitably shifts the balance of concern toward equity, entitlement and intervention solutions."

4.6 The formal economy: distribution by trade and markets

In domestic marketing, the 1988 EU Development Council resolution recognised that, "the rôles of the private and public sectors complement each other since public sector intervention is necessary when the private sector is not yet adequately represented

	Famine Relief	Food Security	Poverty Elimination
Timescale	Immediate	1-10 years Near to Medium Term	10-50 years Long Term
Policies	Distribution	Entitlements	Production, Economic Growth

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...has only a limited intervention capacity (supplies to marginal areas or vulnerable sectors of the population, strategic stocks) or in order to absorb excessively sharp price fluctuations." EU aid, for example, has been used to assist cereal market stabilisation policies. The resolution also states that, "food security does not necessarily imply that a country has to be self-sufficient in foodstuffs," and advocates an appropriate balance between local production and imports. While we agree with the need for balance rather than extreme solutions, reliance on trade to achieve national food security is in most cases not an appropriate policy for developing countries because:

- they generally have only a few exportable products which are often at the mercy of falling commodity prices owing to excess supply;
- most of these are agricultural products, and policies which give priority to cash crops compete for resources with food production, thereby increasing the need for food imports;
- food imports become an added burden on the balance of payments of indebted countries;
- owing to unbalanced income distribution and high transport prices, imported food is not accessible to people in remote areas at times of shortage, which exacerbates the rural exodus to overcrowded cities.

Dependence on food imports creates vulnerability to the hazards of world markets and prices. We therefore urge a **greater degree** of self-reliance in food production. Each country should have the right to determine its own degree of self-sufficiency in basic foods. Where self-sufficiency is not attainable at national level, it should be encouraged at regional level to promote regional food trade and security. This would boost regional integration, especially in Africa.

4.7 The Terms of Trade

The theory of comparative cost advantage, that nations should concentrate investment on production and export of their cheapest product, is no longer as valid as when 18th century economists put it forward. They assumed that capital would continue to be controlled nationally. The free flow of capital means that investment is now governed by absolute profitability, and not by comparative advantage between countries. Herman Daly and Robert Goodland of the World Bank Environment Division conclude: "As capital leaves a country in pursuit of greater absolute advantage, then that country loses both capital and jobs and becomes worse off....There may be good arguments for free trade but, in a world of international capital mobility, comparative advantage cannot be one of them." The prospects for reliance on trade look even bleaker when it is realised where the control of world trade lies. "Traditionally, international trade is seen as an activity carried out between nations. In reality trade flows are dominated by powerful corporations located in Western Europe, North America and Japan. In 1985, the combined sales of the world's largest TNCs exceeded 4 trillion ECU, equivalent to one third of the world's Gross Domestic Product (GDP)" (Watkins, 1992). Almost all primary commodities are each now marketed by fewer than six multi-commodity traders. Cargill - a family-owned Canadian corporation and the world's largest cereals trader - has a greater sales turnover than the GDP of any of the African countries in which it purchases coffee beans.

4.8 Northern Agricultural Policies and Food Security

Where food products are offered on the world market at low prices, the effect on developing country food production is negative, because governments are tempted to rely on cheap imports rather than to support their own producers. World farm prices have been driven down by the EU's Common Agricultural Policy and US policies which have the equivalent effect of dumping subsidised farm exports on the world market:

- the dumping of surpluses like cereals can compete with local food production.
- the dumping of surpluses like sugar and beef can reduce export prices and opportunities for products which some developing countries export.
- the CAP puts up trade barriers against products which developing countries would like to export to the EU but which compete with the CAP, such as fruit, vegetables and processed farm products.
- by protecting European farmers from the ups and downs of world prices, the CAP passes price instability on to developing country farmers.
- by importing animal feeds from developing countries, the CAP helps to encourage export crop production there, sometimes at the expense of food crops.
- European food products reinforce dependence on foods which developing countries may not easily be able to produce themselves (especially wheat).

We have also provided the European Commission with a paper on the impact assessment mechanisms we believe are needed to monitor the effects of the CAP on developing countries. One condition for food security is the ending of exports from the North priced at below the cost of production. The Development Council Resolution of 1988 recognised that, "some degree of protection of developing country markets might be necessary."

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4.9 GATT

"While the majority of developing countries have taken advantage of US and EU food dumping to support industrial development, some have used trade restrictions and price support policies to increase national food self-reliance. For instance, in Indonesia government control over rice imports played an important role in enabling the country to make the transition from one of the world's largest food importers to self-sufficiency over the decade up to 1984" (GATT briefing, 1990). Unfortunately one of the main thrusts of the GATT Uruguay Round agriculture proposals has been to oblige developing countries to open their agricultural markets with little regard for food security objectives. Countries such as Nigeria which have taken trade measures to protect food security have come under strong pressure from Northern governments and agribusiness interests. Although the draft GATT agreement maintains the right of least developed countries to protect their markets from food imports, more advanced developing countries will not be granted the same degree of protection. Development NGOs have proposed the following criteria for the farm trade talks to preserve developing countries' control over their food production and distribution:

- GATT must recognise a fundamental distinction between subsidies used in Northern countries to sustain over-production and distort world markets, and subsidies used in developing countries to meet food security objectives.
- net food-importing countries should receive special treatment if world food prices rise as a result of US-EU farm policy.
- any GATT agreement must enhance developing country access to northern agricultural markets. (GATT Steering Committee, 1991).

4.10 Debt and structural adjustment

External debt is a main force behind the adoption of Structural Adjustment Programmes (SAPs), now supported by the EU under the fourth Lomé Convention. Many studies have shown that SAPs have worked against the long-term interests of food security, by reducing government subsidies for agriculture (as well as for health and education, also important for food security), by forcing the opening of markets to cheap food imports and by pressure to export to pay off debt, switching production resources from food crops to export crops. Examining the effects of SAPs on food security in 1989, FAO concluded: "Available evidence leaves little doubt that the adjustment process often resulted in a sharp fall in the real purchasing power of some of the poor and limited their ability to purchase food and other essential items. At the same time the expected growth has not so far materialised in many countries." Kennes has highlighted a major transition obstacle in many SAPs: "It is only after better farm incentives have resulted in more food production that initial losses of urban consumers can partly be compensated through lower prices and/or through increased rural demand for their products and services." To overcome this, it should be a principle of macro-economic adjustment that there are no net losers among the hungry. Adjustment programmes should include measures to maintain and improve the access of the hungry to food. These measures should be in place before the adjustment reform is instituted. Subsidies on basic foods consumed by the poor should be retained wherever possible. As the 1988 Development Council resolution recognised, institutions supporting SAPs have a responsibility to ensure that measures to strengthen the food security of vulnerable groups form an integral part of the programmes. Frances Stewart sees it as essential for SAPs to follow an egalitarian agrarian strategy focused on small farmers: her three-strand approach comprises land reform, improved access to farm inputs and improved prices for food crops.

4.11 Distribution by Donation: Food Aid

Our 1991 text discussed food aid in detail, in particular recommending improvements in EU food aid. Our conclusions remain valid and we shall treat the subject more briefly here. Taking it as our starting-point that all interventions should be targeted to the food insecure, we agreed that targeted emergency and project food aid could be valuable but questioned the benefits of untargeted programme (government-to-government) food aid. This view is largely shared by the World Bank/World Food Programme report **Food Aid in Africa: An Agenda for the 1990s** (1991) which notes that project food aid has the capacity to reach the poor and hungry directly, while "programme food aid seldom makes a large direct contribution to the alleviation of poverty and hunger." It is important to keep food aid in proportion: the 12 million tonnes cereal food aid donated to the South each year can be contrasted with the 1.8 billion tonnes of food consumed annually between 1981 and 1985, or the 160 million tonnes forecast requirement in sub-Saharan Africa in the year 2000. For Joachim von Braun of IFPRI: "Food aid, while it has played a critical rôle in times of emergency for some countries, is not a reliable source of food supply for food-deficit, low-income countries; when world market prices rise, food aid supply by donors typically is reduced." Nonetheless food aid has been a lifeline for some beneficiary groups, especially in Africa, and for several donors food aid is additional to financial aid, which would not be increased by the same margin if food aid were withdrawn. Food aid is often justified in the public mind by reasons of solidarity: we cannot let the hungry die from starvation. However, it would show more real solidarity if the North put more emphasis on measures to increase food production and food access among the hungry; the other main themes of

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this paper affect more food insecure people than will ever be fed by food aid.

4.12 The three years since our previous text have witnessed further recommendations to improve food aid, which it is worth summarising:

- the need for more local purchases in developing countries and triangular operations, boosting regional production and trade.
- the opportunity to minimise disincentive effects of food aid through joint expansion of supply and demand (eg through public works programmes, employment-based safety nets).
- the need for better integration of relief and development measures: where the poor have suffered severe loss of assets, food aid can play a rôle in their rehabilitation.
- the need to integrate food aid with financial aid, to guarantee the success of food-aided projects.
- increasing opportunities to monetise food aid; these should be explored, on the conditions that the sale of food aid should not have a negative effect on the market, and that what is done with the money should have a positive effect on household food security.
- still the chance to act on the recommendation of the 1988 EU Development Council, that "the Community should take an active part in drawing up a code of conduct for donors and recipients of food aid." A limited step in this direction was taken with the adoption of the Food Aid Charter for Sahelian Countries by CILSS and the Club du Sahel in 1990. Better still would be von Braun's suggestion of "an international mechanism that stabilises overall food aid supply in times of global food scarcity, introduces criteria for food aid allocation to countries in times of need, and represents a sufficient transfer to beneficiaries in need." Reducing national vested interest in food aid would be a substantial gain.

4.13 Preventive measures

Food aid is, of course, not the only way of empowering local communities to cope with food shocks. Some of the recommendations above touch on the wider preventive measures that can be put in place through the joint action of local governments and donors. Perhaps the greatest single contribution which donors can make is to help build effective decentralised capacities to withstand crises and instability. The EU's provision for storage and early warning systems is a positive move; more readily available financial reserves would be a further benefit. Von Braun indicates the range of in-country measures needing support:

"Relief management entails the establishment by the government of a system equipped with executive powers to take appropriate action in food handling and distribution (including emergency food aid from donors) with a network extending to the local, provincial and regional levels. Effective early warning systems are an essential component of such preparedness. A free press and a transparent political environment at the local and central levels are important for ensuring early responses to early warnings. Well-structured relief legislation that incorporates the basic policies to which the government, central and local, is committed is also important. Emergency responses tend to be impaired by poor infrastructure. Investment in infrastructure is thus essential not only for development but also for increasing the effectiveness of relief."

5. The Institutional Response

In a perceptive analysis of 13 texts relevant to food security adopted by the Council of Ministers between 1981 and 1992, the European Commission has identified three phases: in the early 1980s a concentration on medium- and long-term promotion of agricultural sector strategies and rural development; in the mid 1980s a preoccupation with emergency food aid; and more recently the integration of food and agriculture with macro-economic development policies. The Commission draws the paradoxical conclusion that the texts of 10 years ago were the most complete, precise and "current" and that food security has now gone "out of fashion". All the main institutions have recognised that food security requires a combination of policies and that it is a country-specific challenge. They have worked with developing country governments to evolve national food security programmes. The food sector strategies, with which the **EU** experimented in Kenya, Mali, Rwanda and Zambia in the early 1980s, are said to have been subsumed into Lomé Convention programmes in most African countries. Since 1988 **FAO** has had a mandate to formulate comprehensive national food security programmes, now moving from pilot to full operational stage. The **World Bank** in 1989 launched a food security initiative in Africa, under which it has analysed the food security situation in 15 countries and launched food security projects in six. Clearly there is scope for improved co-ordination, both among the donors and with the main policy-making responsibilities in the developing country governments. But food security programmes are an impor-

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tant acknowledgement that macro-economic improvements are not sufficient to achieve food security at household level. Specific measures of policy adjustment and project support are needed to enhance the conditions for rural producers and consumers.

6. Recommendations for project support

Addressed to governments and NGDOs South and North.

6.1 Donors should review the proportion of their aid which is given to food production and food security.

6.2 Donors should assess the extent to which the food insecure (in particular, small farmers and women) are targeted as project beneficiaries.

6.3 Donors should support projects and research only where there is evidence of adequate participation by the beneficiaries.

6.4 Donors should invest in people: especially farmers' and women's organisations.

6.5 Donors should support local training workshops in sustainable agriculture and South-South exchanges enabling farmers to study one another's situations.

6.6 Projects should be supported to rebuild the productive capacity of households.

6.7 Projects should seek to provide the necessities and quality of life which will encourage people to stay in the rural areas.

6.8 Projects should be assessed for the extent to which they reverse environmental degradation.

6.9 Equitable distribution of land is a precondition for sustainable agriculture and helps to shift the priority towards local food production.

6.10 Project technology must be sustainable (appropriate to the social and physical conditions of the area).

6.11 Priority support should be given to

- labour-intensive public works which improve rural infrastructure.
- small-scale credit programmes which stimulate group motivation and institution-building.
- decentralised systems of storage, local food processing and early warning.
- price stabilisation and improved marketing of food crops.
- basic health, education and sanitation services.

6.12 The message of UNCED is that sustainable agriculture is needed in the South and the North. The European Commission should establish an inter-directorate working group drawn from DGs VIII, I, VI and XI, with representatives of NGDOs, European farmers' organisations and Southern food producers, to promote sustainable agriculture. Through its membership of FAO, the EU should integrate this work with the FAO's Sustainable Agriculture and Rural Development initiative.

7. Recommendations for policy adjustment

Addressed to policy-makers North and South.

7.1 Measures to reduce hunger, based on equity and entitlements, need to be implemented before the longer-term goal of poverty alleviation is achieved. They are a contribution to that goal.

7.2 Although agriculture is a sector, food security is a horizontal, intersectoral objective impacting (like sustainable development, gender and age) on many development activities.

7.3 Food security requires a combination of policies and is a country-specific challenge.

7.4 Support for small farmers (family agriculture, women's agriculture, subsistence agriculture) addresses both the supply and demand sides of the food equation. Support for landowners or industrialised farming addresses only the supply side.

7.5 Agriculture in the South should pursue a greater degree of self-reliance. Owing to uncertain world markets, policies to benefit the food insecure should emphasise domestic food crops, not export-led agriculture. Changes in food production and consumption patterns in the North can help change the economic framework of agricultural development in the South.

7.6 The low value which the Northern economic paradigm gives to food products (compared with industrial products) is not applicable to developing countries.

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7.7 Agriculture in developing countries is an economic, social and cultural system.

7.8 Agriculture may be the only economic sector where the creation of jobs can have positive ecological effects.

7.9 Food security planning should have a regional dimension, to promote regional food trade and integration.

7.10 Northern governments must show greater political will to solve the external debt problems of countries where food insecurity is widespread.

7.11 Adjustment programmes should include measures to provide the hungry with access to food. Subsidies on basic foods consumed by the poor should be retained. Measures to compensate the hungry should be in place **before** the adjustment reform is implemented.

7.12 No adjustment programme is complete without assessment of the conditions of land distribution.

7.13 Northern overproduction leading to export dumping of farm surpluses should be brought to an end.

7.14 The European Commission should adopt comprehensive mechanisms to analyse the impact of the Common Agricultural Policy on developing countries and incorporate the analyses in policy-making.

7.15 The European Councils of Agriculture and Development Ministers should hold a joint meeting.

7.16 GATT should recognise the right of all developing countries to take trade measures to protect their food security.

7.17 The power of transnational corporations in trade is greater than that of governments and is in even greater need of regulation.

7.18 Food aid should be targeted to the food insecure. A new code of conduct or international delivery mechanism is needed.

8. Democratic participation: a final word

If small producers and consumers are the principal actors in maintaining and improving food security, they need full representation in the design of national food security programmes. The formulation of these programmes needs to emerge from strengthened organisational structures of producers and consumers. The EU, FAO and the World Bank should back a process by which **food security councils** composed of farmers' and other non-governmental organisations (together with local and central government) in each country work out strategies for the promotion of local production and distribution. In line with EU development policy, will also boost democratisation and the accountability of Third World governments to their people. The process required is one of empowerment and of **democratising food security.** Such a process has received support from Agenda 21 ("Strengthen and develop management and the internal capacities of rural people's organisations and extension services and decentralise decision-making to the lowest community level.") It is part of the institutional reform process to improve the participation of the poor in decision-making. There is a careful balance to be struck between governmental and non-governmental interests; hitherto unheard and unorganised producer and consumer groups need to make their influence felt, but this process should not be misused to undermine governmental institutions or to relieve governments of their duties. The EU and the international institutions should co-ordinate in order to offer developing countries the best possible experience in the design and support of bottom-up food strategies. The European Union, with its experience of decentralised co-operation, its links with NGDOs and the rural development focus of its aid, can make a significant contribution.

Brussels, 1 January 1994

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ETC FOUNDATION

PARTICIPATORY TECHNOLOGY DEVELOPMENT (PTD)

BACKGROUND

Participatory Technology Development (PTD) essentially is a process of *purposeful and creative interaction* between local communities and outside facilitators, in order to understand the main characteristics and dynamics of that particular agro-ecological system, to define priority problems, and to experiment locally with a variety of technological "options". The options are based on ideas and experiences derived from both indigenous knowledge and formal science.

PTD is an approach combining agricultural research and extension. It differs in a number of particulars from traditional research and extension:

1. Inside out rather than outside in: Technology development starts within communities, looking first at existing problems and opportunities.
   Multiple sources of information rather than science as the only source of information.
2. Methods used are generally rapid, low-cost and locally manageable.
3. PTD practitioners could be from *any* rural development organization as well as from local communities.
4. The specific technologies generated by the PTD process are primarily of local validity. The underlying ideas, however, may find a much wider applicability.
5. PTD has a holistic orientation as compared to the reductionist approach applied in conventional research. The holistic complexity is both a strength and a weakness of PTD.
6. PTD does not pretend to offer a complete, consistent model as compared to e.g. the T&V system. Rather one is stimulated to be creative, and adapt and innovate presented ideas where required.

PTD is in fact not a completely new approach. It should rather be seen as a collection of methods, developed and used by both governmental and non-governmental organizations. The new element, if at all, is the comprehensive presentation of these methods which clarifies their respective role in the technology development process.

PTD AND THE PROCESS APPROACH

PTD presents systematically participatory methods and approaches in technology development, from initial contacts with villages up to evaluation of activities and phasing out of outsiders support. In other words it covers a complete process at the village level.

In many ways PTD is comparable with the Participatory Rural Appraisal approach described elsewhere. Yet it is more specifically focused on development of agricultural technology and presents practical methods to support farmers in planning and implementing experiments. It also discusses in more detail the 'tail end' of the process: how to sustain the process after the initial stages, extending the ideas and approach to other villages, and finally the withdrawal of outside support.

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KEY CONCEPTS IN PTD

1. **Technology, understood in its broadest sense**
   Technology in PTD should not be understood only as crop varieties, agricultural tools, farming practices, farm plans, etcetera. Technology also includes specific mental constructs, it embodies certain cultural codes, and certain forms of management and cooperation.

2. **Development towards empowerment and self-reliance**
   The development process that PTD hopes to support, aims not only at generating improved technologies but also at developing socio-cultural structures and the experimental capacity of the communities to sustain the development process, a.o. by increasing peoples competence to identify own needs, problems and opportunities and to define and act upon their own strategies.



Source: R. Bunch, World Neighbors

3. **Indigenous knowledge**
   Indigenous knowledge (IK) refers to ideas, experiences, practices, information that has been generated locally, or is generated elsewhere but has been transformed by local people and *incorporated in the local way of life*. Indigenous knowledge includes local technologies but also local cultural, social and economic aspects.
   PTD believes that new technologies have to be developed upon and imbedded in this cultural based local knowledge system, its (agri-)cultural experience and its socio-economic structures

4. **Farmers experimentation**
   Farmers are continuously experimenting and adapting their farming practices. And there is enough evidence to indicate that there is a farmer based method which is in many ways similar to the scientific method (Rhoades and Bebbington, 1988). In PTD, the PTD practitioner coming from outside tries to *link up with and strengthen the farmers' research process* by making technology development a *collective* process and by developing the research process with farmers explicitly and systematically.



Source: R. Bunch, World Neighbors

5. **Outsiders' participation**
   In PTD, "participation" implies *an acceptance that people can, to a large extent, identify modify their own solutions and their needs*. It means a shift from farmers participatin research managed by outsiders, to outsiders participating in agricultural experimenta undertaken by farmers. Outsiders' participation will be focused towards enhancing farm capacity to develop their farming system in a sustainable way and to increase their co over resources and decision making.

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Participation within a PTD approach aims at laying the *decision making* process, about problems to be solved, innovations to be tested, etc., in the farmers' own hands. And at ensuring that especially poor or marginalized sectors of the population, who did not have a clear voice before, are involved in dialogue and decision making (enhance *equity*). It also focuses on a *process* of strengthening the capacity of people to continue on their own path in informal experimentation and creation of their own alternative technologies.

6. Low-external Input and Sustainable Agriculture (LEISA)
There is a need to search for new approaches to agricultural development, that do not use excessive amounts of non-renewable resources (fossil energy and phosphates), neither enhances erosion of soils, genetic resources and indigenous farmers' knowledge and skills nor leads to unacceptable pollution. These new approaches are given here the name of LEISA.
LEISA aims at:
- optimizing the use of locally available resources;
- using external inputs only as a means to *complement* deficient elements in the ecosystem;
- maximum recycling of the external inputs;
- a stable, growing and long lasting production level;
- developing eco-specific farm practices in each ecological and socio-economic system.

METHODOLOGY

The six groups of activities in PTD

The PTD approach has been studied and further developed during a workshop in 1988 convened by Information Centre for Low-External-Input and Sustainable Agriculture (ILEIA). In that process more than 200 experiences of organizations working to develop agricultural technologies with farmers have been documented. It appeared that these experiences could be fitted into 6 groups of activities in PTD as described below.

1. How to get started
Studying existing information. Building up a relationship of confidence with local networks of farmers.
Participatory diagnosis: making a joint analysis of existing situations, farming systems, and identifying main problems.
2. Looking for things to try
Identifying indigenous technical knowledge as well as relevant formal knowledge. Eliciting farmers' criteria. Screening and selecting topics for further development, including criteria leading to optimal use of local resources and sustainable systems of production.
3. Organizing the experiments
Designing and planning experiments, based on farmers' criteria, and measuring techniques, with suggestions from outsiders for improved methodologies.
Building experimental groups, training of farmer-experimenters.
4. Trying out
Actual implementation of the experiments by farmers and monitoring and evaluation of the results.
5. Sharing results with others
Communication of results with local and scientific networks to scrutinise and interpret them, and to encourage others to test and adapt the results for their circumstances.

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Table 1: Some operational methods used in carrying out PTD activities and some examples

Activity	Description	Examples of Operational Methods	Examples of Output Indicators
I Getting started	- building relationships for cooperation - preliminary situation analysis - awareness mobilization	- organizational resources inventory - community walks - screening secondary data - community surveys, problem census + projective techniques	- inventories - protocols for community participation - core PTD network
II Looking for things to try	- identifying priorities and scientific knowledge and information - identifying local community - screening options, choosing selection criteria	- farmer experts workshop to tap indigenous knowledge (case histories, diagramming, preference ranking, local repertoire" and indicators, critical incidents) - study tours - options screening workshop	- agreed research agenda - improved local capacity to diagnose a problem and identify "options for improvement" - enhance self-respect
III Designing experiments	- review existing experimental practice - planning and designing experiments - designing evaluation protocols	- improvement of natural experimentation on "the spot" - design workshops + prompting questions, slides/ videos, case histories - testing alternative designs - farmers-to-farmer training	- experimental designs which are manageable, evaluable, reliable - protocols for monitoring and evaluation - improved local capacity to systematically design experiments
IV Trying out	- experiments, measurements/ observation - evaluation	- stepwise implementation - regular group meetings - fielddays/ exchange visits - supporting activities	- ongoing experimental programme - enhanced local capacity to implement, monitor and evaluate experiments systematically - enlarged and stronger exchange and support linkages
V Sharing results with others	- communication of basic ideas and principles, results and PTD process - training in skills, proven technologies and use of experimental methods	- field workshops - visits to secondary sites - farmer-to-farmer training + hands-on training	- spontaneous diffusion of ideas + technologies - enhanced local capacity for farmer-to-farmer training + communication - increasing number of villages involved in PTD
VI Sustaining the process	- creation of favourable conditions for on-going experimentation and agricultural development	- organizational consolidation - development of resource materials - participatory monitoring of impacts on agri-ecological sustainability	- consolidated community networks/ organizations for agricultural self-management - resource materials - consolidated linkages with R&D institutions

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6. Sustaining and consolidating the process of PTD
Creating favourable conditions for farmers' organizations, local institutions and support at policy level. Establishing physical infrastructure and educational facilities to strengthen local experimental capacities and local management of the process of innovation.
Scaling up and gradually phasing out of outsiders support.

EXAMPLES

The PTD process in practice

Out of many examples on how PTD is being developed in practice, we would like to mention one from a governmental and one from a non-governmental organization.

- In the first category e.g. Lightfoot and Ocado (1988) describe the experiences of the Farming Systems Development Project Eastern Visayas in the Philippines. The research team with socio-economic as well as technically oriented scientist succeeded in working with farmers along PTD lines and developed jointly new ways to control a crucial weed problem (Imperata cylindrica).
- On the other side of the world in Mali an NGO, World Neighbors, has been pioneering farmer centred technology development methods where farmers are taking responsibility for experimentation and are also trained to become village extensionist.

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Audio-visual aids in problem diagnosis

In participatory diagnosis, in analyzing with farmers existing problems, some form visualization of what is being discussed is a very powerful tool in developing a common understanding.
In a research and development programme of the Centre for Agricultural Research (ICA) in Colombia, a PTD team used slides related to a single topic, in combination with four sets of questions to stimulate identification and discussion of problems, causes, and options (Engel 1988). Each slide depicted one basic aspect of the topic. The slides had been taken in the community so the people and setting shown could be recognised by the discussion group. The four sets of questions were:

- What do you see? Do you have this/do this?
- Is it important? Why/why not?
- Do you have problems with it? When/where/why?
- What have you tried to do about the problem(s)? What happened?

Improved design of farmers' experiments

Experimentation is part of every farmer's life. In PTD it is a central theme in which improvements may be suggested by outsiders to this traditional experimentation to enhance validity of results while still leaving final control to the farmers.

A group of researchers and extensionist from various developing countries developed together when attending a PTD workshop the following list of what they thought to be minimum requirements for improved farmers' experimentation:

1. Experimentation limited to 1 variable at a time, controlling all other variables. Others suggest it to be sufficient when at least awareness has been reached as to how many variables may not be constant between test plot and control.
2. Control plot, or control (group of) animal(s).
3. Five repetitions, either on one farm, or spread over several farms.
4. Proper demarcation and measurement of test plot/animals.
5. Small experimental plots to decrease risks.
6. Proper measurements of yields of experimental plots as well as control. Either through measuring total results or through adequate sampling.
7. Monitoring of expenditures as well as income for both experimental plots as well as control.

Farmer-to-farmer extension in the Philippines

Farmers themselves are often the best extensionists to train other farmers in newly developed technologies.

A group of farmers in Claveria, the Philippines, concerned about soil erosion on steep slopes sent six members to visit upland farmers on Cebu (a neighbouring island), where World Neighbors had been assisting farmers to lay out contour bunds, plant hedge-rows to induce natural terracing. The Cebuano farmers trained the visiting farmers in laying out contours using the A-frame, bunding-ditching to establish strips and control erosion, and hedge-row planting of fodder grasses and legume trees. The following year, the Cebuano farmers paid a return visit to the Claveria farmers to observe the bunds and crops, discuss the adaptations made by the Claveria farmers and share ideas about how the system might be further developed. (Fujisaka 1989)



Source: R. Bunch, World Neighbors

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LIMITATIONS

From the above, the key strengths of the PTD have become clear. It gives a consistent framework for methods and techniques covering the whole process at village level. Practical ideas are described, how outside facilitators and farmers can interact to solve bottlenecks in agricultural production.

Yet several of these strengths are at the same time some of the approach' weaknesses:

- the approach is focusing on agricultural technology problems only; there is a real danger that other problems including socio-economic ones will be overlooked;
- the new technology options resulting from the PTD process are primarily of local validity;
- the approach is quite labour (staff-) intensive in the initial stages; the area covered could therefore be limited, *unless* careful attention is paid to the approaches available for sustaining the process and phasing out of outsiders' support;
- PTD practitioners should be open to farmers' needs and their knowledge, and have skills in agriculture as well as communication and group dynamics; in other words one expects a lot from them;
- in practice this means that rarely any single organization has all the skills and knowledge 'in house' to support a PTD process alone; an NGO may need linkages with researchers, a research institute linkages with extension or NGO field staff, etc. Where these linkages are problematic the feasibility of PTD may be quite limited.

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AFRICA'S FOOD CHALLENGE: THE FOOD CRISES AND FOOD SECURITY SITUATION.

The food situation in most developing countries has improved dramatically since the early 1960s but not for those in sub-Sahara Africa. Nearly half of the regions population suffers from chronic food shortages. Its estimated that in 1989 some 235 million people in sub-Sahara Africa lived in households suffering from food deprivation (Maxwell1992). Malnutrition levels have increased in recent years as a result of famine, drought and war which have disrupted food availability.

WHAT IS FOOD SECURITY(FS)?.

The definition of FS has developed over time. During the seventies and the beginning of the eighties, inadequate food consumption was essentially blamed on an inadequate and later also on an uncertain food supply. Consequently, Food Security was then concerned in terms of a sufficient and ensured supply of food.

The opinion grew in the eighties that no inadequacy and uncertain food supply formed the basis of hunger and malnutrition but rather a lack of access to that food.

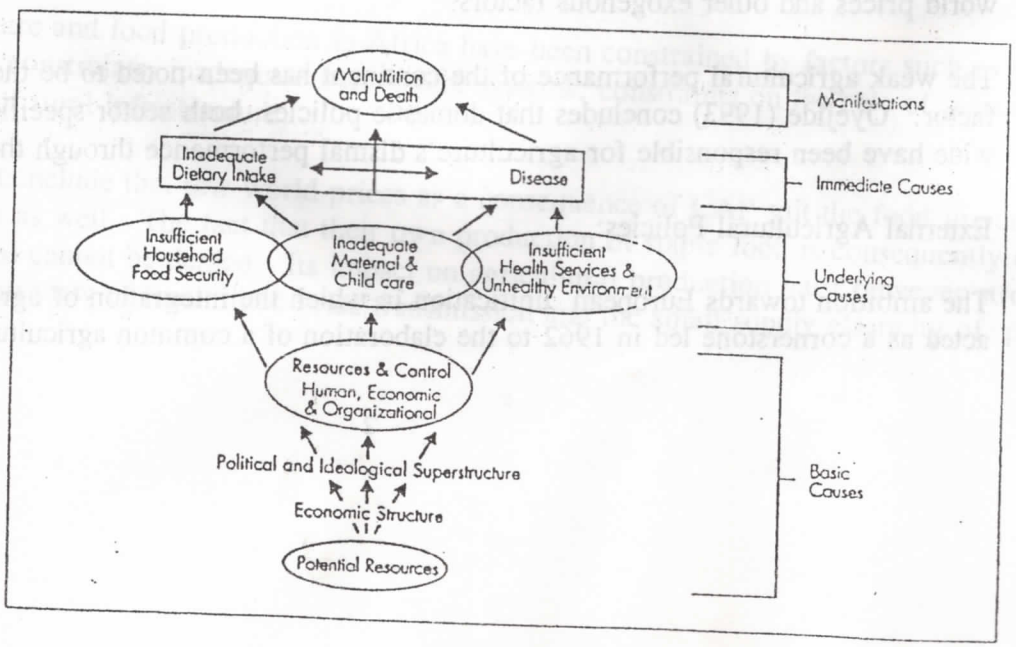
The concept further included the issue of quality (Maxwell and Smith 1992), thus the highest state of food security requires not just secure and stable access to a sufficient quantity of food, but also access to food that is nutritionally of adequate quality and culturally acceptable.

THE FOOD INSECURE IN AFRICA

The World Hunger programme of Brown University estimated the number of food insecure in SSA (Sub-Saharan Africa) at 23.5 million. A considerable number of food insecure are located in South Asia, India, Bangladesh, East Asia and SSA. The largest part of the Food insecure are SSA (38%) followed by Asia (35%), South America (26%) and Central America (23%). Food insecurity in Africa relates to several factors:

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Causes of malnutrition and death



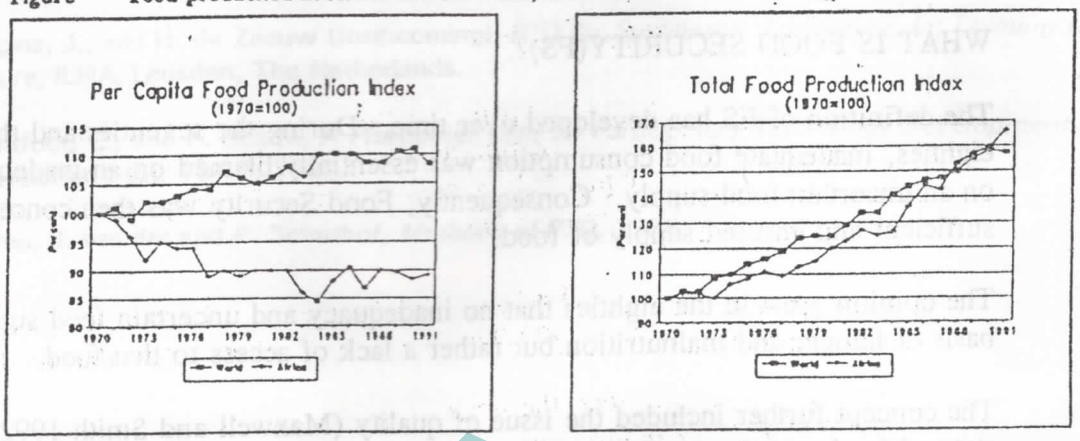
[Source] Maxwell and Smith, 1992: p.25.

The above figure shows the interplay of these factors related to potential resources, econo structure, political superstructure and control lead to various problems which eventually le to food insecurity or even malnutrition and death.

Africa's Food Security:

The graphs below shows the FAO indexes of total and per capita food production for Afri and for the world.

Figure **Food production in Africa and the world, 1970-91**



Total food production in sub-Saharan Africa as a whole has grown as fast as the rest of t world since 1970 and at even faster rate during (1987-91). However unlike most of the r of the world, population has risen more quickly than food production.

According to the world bank, for Africa to avert a food crisis, it would have to experienc sustained growth of food production of about 3.5% per year.

CAUSES OF FOOD INSECURITY IN AFRICA:

Food insecurity has been attributed to many factors. According to Maxwell (1992) there limited growth of the agricultural sector, the increasing income disparity, the rapid population growth and urbanization. Other causes are attributed to war, drought, decline world prices and other exogenous factors.

The weak agricultural performance of the continent has been noted to be the most underl factor. Oyejide (1993) concludes that domestic policies, both sector specific and econom wide have been responsible for agriculture's dismal performance through the early 1980'

External Agricultural Policies:

The ambition towards European unification in which the integration of agricultural mark acted as a cornerstone led in 1962 to the elaboration of a common agricultural policy (C

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The impact of these changes on the world markets was two fold. Firstly they resulted in lower world prices of temperate zone products and a screening of European markets against imports from abroad. Secondly, these policies increased the variability of world prices of temperate zone products.

Though the EC trade policies with LDC's do not appear to have had serious detrimental impact on the exports of most developing countries due to preferential trade policy for some products of export, the effects of low prices on temperate products have had repercussions. Low prices indeed remove the incentive to produce food and many perceive this as an important cause for lagging behind of agriculture development in the LDC. This reasoning is however only valid to the extent that world market prices also penetrate to local markets, which is not the case for all countries.

Development Policies:

Its been argued that price is not the most limiting factor for an increase in agricultural production. Development policy, more than price, has contributed most to the exploitation of agriculture in developing countries. In many developing countries, domestic food prices were systematically kept below world prices (Pinstrup - Anderson, 1989).

Oyejide (1993) says that the concentration of most African countries from the 60's to the beginning of eighties with industrialization as a development model which resulted in transfer of labour and capital from agriculture to industry heavily oppressed agricultural development.

On top of the industrialization policy through import sub-situation there is a second unintended reason for the harm to agriculture. Agriculture experts take a considerable share of trade in most African countries and other developing nations. Hence it's inevitable that the sector suffers from heavy taxation burden.

During the 80's, change by African countries of their macro-economic policies resulted in an adjustment of exchange rates and liberalization of internal and external trade as well as in a relaxation of payment modalities. The official producer prices were also increased. Such increase in prices however do not benefit the food insecure.

Other Factors:

Agriculture and food production in Africa have been constrained by factors such as the physical constraints, inadequate land tenure systems, constraints on the role of women and neglect of rural infrastructure.

We can conclude that low world prices as a consequence of CAP suit the food importing countries as well. The fact that their own production of staple food is consequently not stimulated cannot be denied. Its impact on agricultural production must however strongly be reduced in view of the limited price transmission and the small supply elasticity of prices.

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Non price factors, such as poor infrastructure, lack of credit and inefficient markets put a much heavier burden on the development of agriculture. The lagging of agriculture is furthermore largely due to the internal economic policies of the developing countries.

TECHNIQUE USED TO IMPROVE FOOD SECURITY:

They can be divided into four groups:

i. Increase in the availability of food
ii. Income transfer
iii. Food subsidies
iv. Credit gains

Availability of Food: The African governments are faced with a population explosion. Measures that help to control the population explosion are crucial in the battle against food insecurity. Increase in food supply should be accompanied by price policies. In SSA which has net food buyers, an increase of food prices will only benefit the larger farmers and not the food security of the poor.

Promotion of food security (either in short, middle or long run) will be achieved by keeping food prices for consumers low. Agriculture production can be maximized by increasing access to production, enhancing technology and agriculture inputs for a larger group of farmers.

By now pursuing maximization of agricultural production but rather maximization of real income of the poor, African governments can already make some progress towards the enhancement of food security,

Food Subsidies: Food Security can be fought by increasing the purchasing power rather than directly increasing incomes. This can be done by subsidizing food that is mainly consumed by the poor. The main advantage of subsidizing the poor's food such as food grains and certain root and tuber crop is the low administrative cost.

Credit Supply: Increase of the access to credit enables people to employ themselves through private investments, makes them more independent from others and consequently reduce Food Security.

Such credit facilities should be open to discriminated groups such as women who in Africa play an important role in agricultural production.

Income Transfers: Income transfer measures try to enhance the indirect entitlement to food by directly increasing income. Examples include subsiding fertilizer prices, import quota or the levying of tariffs on imported agricultural products, export subsidies for agricultural products and public investment in sectors that do not satisfy the profitability criteria of other sectors.

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It can also be achieved by innovating public infrastructure projects, by target food programmes where wages can be paid in cash or food.

To promote food security at individual levels, other considerations include:

- Promoting the use of indigenous food products.
- Application of various sustainable home gardening technologies
- Popularizing various techniques of sustainable agriculture at the local level.

Summary and conclusion: The concept of food insecurity now takes into consideration:

- Supply
- Access
- Utilization

Major causes of food insecurity in Africa are be summarized by type of risk in the following table.

Sources of risks for FIS and the affected population groups

Risks	Households and People at Risk of Food Insecurity
Crop production risks (pests, drought, and others)	– Smallholders with little income diversification and limited access to improved technology such as improved seeds, fertilizer, irrigation, pest control – Landless farm laborers
Agricultural trade risks (disruption of exports or imports)	– Smallholders who are highly specialized in an export crop – Small-scale pastoralists – Poor households that are highly dependent on imported food – Urban poor
Food price risks (large, sudden price rises)	– Poor, net food-purchasing households
Employment risks	– Wage-earning households and informal-sector employees (that is, in peri-urban areas and, when there is a sudden crop-production failure, in rural areas)
Health risks (infectious diseases, for example, resulting in labor-productivity decline)	– Entire communities, but especially households that cannot afford preventive or curative care and vulnerable members of these households
Political and policy failure risks	– Households in war zones and areas of civil unrest – Households in low-potential areas that are not connected to growth centers via infrastructure
Demographic risks (individual risks affecting large groups)	– Women, especially when they have no access to education – Female-headed households – Children at weaning age – The aged

[Source] von Braun et al., 1992: p. 17.

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LOW EXTERNAL INPUT AND SUSTAINABLE AGRICULTURE (LEISA)

Trends in Tropical Agriculture

Global and national production figures hide differences between regions and between different types of farming systems within a country, A closer look at the situation of tropical agriculture reveals that change has taken two main paths to be outlined below. But let us start with the point of origin: traditional agriculture.

Originally, agriculture in the tropics depended on local natural resources, knowledge, skills and institutions. Diverse, site-specific farming systems evolved out of a long process of trial and error in which balances were found between the human society and its resource base. In most cases, production was oriented primarily to the subsistence of the family and the community. Modes of cooperation between community members were highly developed.

Traditional farming systems continued to develop in a constant interaction with local culture and local ecology. As conditions for farming changed, e.g. because of population growth or the influence of foreign values, the farming system was also changed. Where adaptation to the new pressures was not fast enough, the natural resource base was eventually destroyed as was the society depending upon it. Many farming societies disintegrated because of the lack of local capacity to manage change which led to severe environmental degradation, e.g. in Mesopotamia along the Tigris and Euphrates River, the ancient Mayan Culture in Central America and the ancient Mediterranean civilizations of Phoenicia, Palestine, Egypt, Greece ad Rome (Lawton & Wilke 1979, Weiskel 1989;).

Many traditional farming systems were sustainable for centuries in terms of their ability to maintain a continuing, stable level of production (TAC/CGIAR 1988). However, these systems have had to cope with particularly rapid changes during and since the colonial period: introduction of foreign education and technology in agriculture and health care; increased population pressure; changes in social and political relations; and incorporation into an externally-controlled international market system. Originally subsistence-oriented systems have become increasingly market-oriented, and improved communication has increased the demand for consumer goods.

In response to foreign influence and the needs and growing aspirations of increasing numbers of people, farming systems in the tropics tend to change toward one of two extremes:

- Excessive use of external inputs; referred to here as high-external input agriculture (HEIA).
- Intensified use of local resources with few or no external inputs, to the extent that the natural resources are degraded; referred to here as low-external-input agriculture (LEIA).

Excessive Use of External Inputs (HEIA)

High-external-input agriculture depends heavily on artificial chemical inputs (e.g. fertilizers, pesticides), hybrid seed; mechanization based on fossil fuels and often also irrigation. This type of agriculture is consuming non-renewable resources such as oil and phosphates at an

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alarming rate. It is capital-intensive and highly market-oriented. The cash needed to buy the inputs is often obtained by selling farm products. HEIA is possible only, where ecological conditions are relatively uniform and can be easily controlled (e.g. in irrigated areas) and where delivery, extension, marketing-and transport services are good. Increased needs for agricultural products and the development of new varieties of maize, wheat, rice and other commercial crops made the introduction of HEIA technology appear attractive. HEIA is found in the resource-rich', 'high-potential' areas of developing countries, and is most widespread in Asia.

However, the excessive and unbalanced use of artificial inputs in HEIA can have serious ecological, economic and sociopolitical repercussions. For example, In India the introduction of HEIA under the banner of the 'green revolution' channeled scarce investment resources into capital-intensive agriculture in limited areas, which became dependent on imported machinery, equipment, seeds and other inputs. The built-in bias towards inequality between regions and persons worsened the material situation of the majority of smallholders, who were bypassed by the 'green revolution' (Sachs 1987).

According to Sachs (1987), two major misjudgments were made before the introduction of the 'green revolution':

- The increase of the prices of chemical fertilizers and fuel and the general decrease in international prices as a result of the worldwide overproduction of grains had not been foreseen. These changes led to higher consumer prices for food and lower farm-gate prices; the main beneficiaries have been the suppliers of the fertilizers and fuel.

- The ever-increasing dependency on pesticides and fertilizers had not been foreseen. These have contaminated the streams and water tables, with serious hazards for the population.

Erosive Forms of Low-External-Input Agriculture (LEIA)

Low-external-input agriculture, also called low-resource (OTA 1988), low-external-input (WCED 1987) or undervalued-resource agriculture (Chambers et al. 1989), is practiced in what Chambers calls complex, diverse and risk-prone areas. Here, the properties of the physical environment and/or the commercial infrastructure (poorly developed rural transportation and input distribution systems, inadequate savings/lending institutions) do not allow widespread use of purchased inputs. Often, only low quantities of, for example, artificial fertilizers and pesticides are sporadically used and then only for a few cash crops and by a small elite group of farmers.

Wolf (1986) estimates that some 1.4 billion people, or about one quarter of the world's population, depend for their livelihood on this form of agriculture: about I billion in Asia, 300 million in sub-Saharan Africa and 100 million in Latin America. It is found in the rainfed, undulating hinterlands of developing countries - the drylands, highlands and forestlands with fragile or problematic soils. In terms of area, LEIA is most widespread in sub-Saharan Africa. The area under LEIA is growing as rural populations in many countries become increasingly impoverished, as external inputs become more expensive and as many deeply indebted governments of developing countries which do not manufacture HEIA inputs can no longer afford to import them.

In many LEIA areas, production growth lags behind population growth. As new technologies to intensify land use in a sustainable way have not been developed or are not known to the

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farmers, they are often forced to exploit their land beyond its carrying capacity. This is particularly the case they have been ousted from or deprived access to better-quality land reserved for 'modern' cropping or ranching. The over utilization of LEIA smallholdings and their expansion to new often marginal farming areas lead to deforestation, soil degradation and increased vulnerability to pest attacks, diseases, torrential rains and extended droughts. Many tropical land-use systems are in the midst of such a downward spiral of nutrient depletion, loss of vegetative cover, soil erosion and economic, social and cultural disintegration.

Implications for Agricultural Sustainability

In order to understand what implications these trends have for sustainability, we first need to consider the roles of internal and external inputs in agricultural production. In well-functioning LEIA systems, crops, trees, herbs and animals have not only productive but also ecological functions, such as producing organic matter, nutrient pumping, creating a nutrient reservoir in the soil, natural crop protection, and controlling erosion. These functions contribute to the continuity and stability of farming; they can be seen as producing internal inputs.

Well-functioning LEIA systems can be compared with mature natural ecosystems, in which nearly all biomass produced, is reinvested to maintain fertility and biotic stability of the system. However reinvestment is more limited, because man extracts part of production from an agroecosystem. By replacing natural internal inputs such as manure and compost by external input such as artificial fertilizers, more products can. be extracted from the agroecosystem. By replacing natural processes by human-controlled processes, such as irrigation, variability in production can be educed.

By selecting and breeding crops and livestock, people enhance their ability to convert inputs into useful products. In this process, other characteristics such as natural resistance or competitive ability are lost. These functions of nature that have been sacrificed must be assumed by man (Stinner & House 1987, Edwards 1987, Swift 1984, Conway 1987).

In HEIA systems, this replacement of ecological function, by man has gone much further than in LEIA systems. Diversity is replaced by uniformity for reasons of technology efficiency and market opportunities. In the short term, the use of external inputs permits great increases in land-use intensity. This made a substantial contribution to the global increase in food production. until the mid-1980s. According to FAO, the enormous increase in fertilizer use in developing countries is the most potent single factor, in raising productivity, in combination with numerous other external inputs such as modern varieties and breeds, irrigation and relevant information (Alexandratos 1988). However, the recent stagnation in production increase has raised strong doubts whether long-term productivity of such HEIA systems is secure.

Although concerted efforts have been made by development agents to convince farmers that 'modern' inputs will increase production, the majority of farmers have not adopted them. "Perhaps as much as 80% of agricultural land today is farmed with little or no use of chemicals, machinery or improved seed" (Dover & Talbot 1987). Some farmers made a conscious choice against a 'green revolution' package because it did not suit their farming conditions; others simply could not adopt it because the inputs were not locally available or were too costly. However, the tendency noted above towards increased extraction of

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products and decreased reinvestment of internal resources is leading to soil impoverishment in many areas rendering such LEIA systems nonsustainable.

Focus of Conventional Agricultural Research and Extension

The activities and procedures of conventional research as taught at agricultural universities and practiced in official agricultural research and extension organizations has contributed to the nonsustainability of current world agriculture by tending to concentrate on HEIA systems, and neglecting the needs of LEIA farmers.

To some extent, this is understandable. Conventional technology development is expensive. As the investment must be cost-effective from a national viewpoint, it is usually made in areas that can yield surpluses for industry or export or products to feed urban dwellers, e.g. rice, maize, milk, chickens. Also as a result of various social processes, official agricultural research tends to serve resource-rich farmers, who are able to bias technology development in their favour (Roling 1988).

Conventional agricultural research with its bias toward high-potential areas, export crops and better-off farmers has produced results which are out of the reach of most farmers and inappropriate for LEIA areas. This has been, among other reasons, because of its:

- **Focus on single commodities.** The emphasis has been on maximizing production of particular commodities, and not total farm production. Plants, which compete with the desired crop for water, nutrients and light, are regarded as weeds. Technology development has concentrated on reducing this competition. This has hindered the study and enhancement of positive interactions between different plants, animals and man.

- **Primarily market orientation and associated nutrient drain.** Integration of farms into national or international markets results in a net nutrient drain if extracted nutrients cannot be replenished. Very few technologies have been developed for returning nutrients from consumer to producer areas.

- **Disregard of environmental effects.** Driven by research procedures and political pressures to focus on short-term productivity, agricultural research has tended to externalize longer-term environmental effects to the future or to other sectors. Given the focus on the crop, field and - at best - farm level, the long-term effects on soil fertility, the regenerative capacity of natural vegetation and fauna, human health etc. have not usually been given sufficient consideration.

- **Neglect of rainfed areas and local resources.** Until recently, conventional research largely neglected the rainfed and marginal areas where LEIA farmers live and the local crops and animals which provide their livelihood. Research content and design has had little relevance to the major concerns and methods of LEIA farmers

- **Gender bias.** Unlike most farming, agricultural research tends to be the preserve of males. Western-trained, researchers are usually imbued with Western models of the division of labour between men and women, in which the men dominate the external economic domain. This scenario, inappropriate as it is even for industrial societies, has blinded researchers to the fact that women play a significant role in

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agriculture. As a result, agricultural research has given little attention to solving the problems of female farmers and, in the design of new technologies, often disregards important questions of women's influence on decision-making and labour allocation.

- **Neglect of local farmers' knowledge.** The conventional top-down approach to technology development within agricultural research institutions gave scientists little opportunity to become well acquainted with the conditions, objectives and knowledge of LEIA farmers. The situation was not improved by the widespread attitude of extensionists and researchers, instilled already in school and university, that the formal system is the ultimate source of innovations and that information can come only from above.

- **Emphasis on station-based research.** The production conditions of research institutes and experiment stations do not resemble those of farmers and cannot possibly represent the highly variable conditions in rainfed agriculture. As a result, technology tested on-station often does not work under farmers' conditions, while the good qualities of local varieties, which are adapted to local conditions, are not recognized under station conditions (Biggs 1984).

- **Extension of incomplete products.** Conventional technology development tends to be organized in terms of disciplines, and not according to the aggregation level of the farm. As a result, the 'products' delivered for extension are often incomplete: they represent merely the answer to a disciplinary technical problem, without taking account of, for example, production aims, labour allocation between various crops, risk spreading, access to and affordability of external inputs, and other aspects of the socioeconomic context. Not only the research but also the extension systems are male-dominated and have not provided women - the major food producers in many regions, with relevant services. Nonformal education for women is generally related to their reproductive activities in home economics and nutrition. Most rural women have little access to training related to productive and income-generating activities such as cropping and livestock-keeping. Considering the major role of women in crop and livestock care, this indicates a serious flaw in most extension systems. Much more serious than the lack of sufficient staff, supplies and technical support for extension systems has been the lack of appropriate information and technologies that they could make available to smallholders. In many rainfed systems. The available science based technology simply does not apply. Interventions have often been introduced in ignorance of the realities of existing farming practices and systems
As conditions in LEIA areas are diverse, farming recommendations and services must be site specific. The conventional Transfer of technology model of widely disseminating a uniform technology package denies that transformation of technology continues even while it spreads among farmers. The TOT model prevents researchers and extensionists from linking into these transformation processes so as to help develop different techniques for different circumstances.

External Inputs and LEIA Farmers: Conclusions

Some of the reasons why LEIA farmers have been loath or unable to use the above-mentioned external inputs are:

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- they are not available or their availability is unreliable on account of poor commercial infrastructure and services;
- if they are available, they are costly;
- they are risky and may be inefficient under variable and vulnerable ecological conditions (e.g. erratic rainfall, sloping land);
- they are not very profitable under the above circumstances;
- communication between research and development personnel and farmers is poor, which often leads to serious (and sometimes dangerous) comprehension gaps and to incompatibility of innovations and technology recommendations with local ecological conditions and cultural values.

Dangers involved in promoting the introduction of such inputs into LELA areas include:

- loss of diversity in the farming system, rendering them unstable and more vulnerable to ecological and economic risks;
- irretrievable loss of local genetic resources and traditional knowledge about ecologically-oriented husbandry and local alternatives to purchased inputs;
- realities social and cultural disintegration and marginalisation of poorer farmers, particularly women;
- environmental damage, particularly as a result of excessive use of agrochemicals.

Farmers who are given easy access to credit may be lured into high capital investment and production methods which demand that high levels of external inputs be maintained or increased. At the same time as prices for petroleum-based fertilizers, herbicides, pesticides and fuels are increasing, prices of agricultural products are often being kept artificially low by national governments or by the flooding of local markets with subsidized imports of agricultural products from industrialized countries. Third World farmers are then in great danger of being trapped in a debt spiral.

Where purchased inputs are subsidized by the government or a development project, their use is feasible only for a limited term. As soon as the subsidies are withdrawn, most farmers are forced to abandon the inputs. If they have, in the meantime, adjusted other aspects of their farming systems (e.g. reduced diversity of crop and livestock species, or increased nutritional dependence on crops like maize which require high fertilizer inputs), then they will be in very serious trouble.
It would thus appear that the 'green revolution package could worsen rather than improve the situation of LEIA farmers in complex, divers, and risk-prone areas. But what alternatives are available?

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the watershed, recycling nutrients within the farm, managing nutrient flow from farm to consumers and back again, using aquifer water judiciously, and using renewable sources of energy. As these flows are not confined by farm boundaries, LEISA requires management not only at farm level but also at district, regional, national and even international levels. At each level, technologies are sought to make the flow cycle as short as possible and to balance the flows. In this book, the focus is on practices that can be applied at farm level. Questions related to techniques and systems at village level and above are equally important, but should be addressed in a separate study.

LEISA incorporates the best components of indigenous farmers' knowledge and practices, ecologically-sound agriculture developed elsewhere, conventional science and new approaches in science (e.g. systems approach, agroecology, and biotechnology). Thus far, conventional science has served mainly HEIA, but the contributions it could make to LEIA should be explored to the full.

LEISA practices must be developed within each ecological and socioeconomic system. The specific strategies and techniques will vary accordingly and will be innumerable. The experience thus far of developing LEISA systems cannot provide universal, ready-made answers for the problems of farmers in other areas, but can provide' some indications of principles and promising possibilities.

The process of combining local farmers' knowledge and skills with those of external agents to develop site-specific and socioeconomically adapted farming techniques has been given the name 'Participatory Technology Development' (PTD). Farmers work together with professionals from outside their community (e.g. extensionists, researchers) in identifying, generating, testing and applying new techniques. PTD seeks to strengthen the existing experimental capacity of farmers and to encourage continuation of the 'Innovation process under local control (Haverkort et al. 1988). PTD is an essential element in the development of sustainable farming systems and a central concept in this book.

The experience of combining indigenous and scientific knowledge through a process of PTD indicates strongly that it is indeed possible to transform LEIA to LEISA: Low-External-Input and sustainable agriculture. This approach to agricultural development appears to be better adapted to the needs and opportunities of LEIA farmers and to fit better into their cultural context than the conventional approach.

LEISA cannot be presented as the solution to the world's pressing agricultural and environmental problems, but it could make a valuable contribution to solving some of them. It is, above all, an approach to agricultural development which addresses the situation in areas of rainfed agriculture which have been neglected by conventional approaches.

Institutional changes will be needed to ensure that LEISA can be actively sought and found (cf. Chambers 1983). Particularly the political prerequisites are essential: for example, where rural people do not have secure land-use rights, or where wars ravage the land, LEISA has little chance. Without political will for social justice and peace on all levels from the village to the globe, the pursuit of sustainable development is imaginary.

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[1] *Adapted from* ***Farming for the Future*** *(An Introduction to Low External Input Agriculture)*

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Towards Low-External-Input and Sustainable Agriculture (LEISA)

In view of the limited access of most farmers to artificial external inputs, the limited -value of these inputs under LEIA conditions, the ecological and social threats of 'green revolution' technology and the dangers of basing production on nonrenewable energy sources, the strong emphasis on HEIA in agricultural development must be questioned. However, it is also open to question whether it will be possible to raise world food production sufficiently without the use of such external inputs. Besides, natural as opposed to artificial inputs can also have detrimental environmental effects. LEISA is an option which is feasible for a large number of farmers and which can complement other forms of agricultural production. As most farmers are not in a position to use artificial inputs or can use them only in small quantities, it is necessary to concentrate on technologies that make efficient use of local resources. Also, those farmers who now practice HEIA could reduce contamination and costs and increase the efficiency of the external inputs by applying some LEISA techniques. It is important that the agroecological knowledge of both scientists and farmers be applied, so that internal and external inputs can be combined in such a way that the natural resources are conserved and enhanced, productivity and security are increased and negative environmental effect are avoided.

LEISA refers to those forms of agriculture that:

- seek to optimize the use of locally available resources by combining different components of the farm system, i.e. plants, animals, soil, water, climate and people, so that they complement each other and have the greatest possible synergetic effects;

- seek ways of using external inputs only to the extent that they are needed to provide elements that are deficient in the ecosystem and to enhance available biological, physical and human resources. In using external inputs, attention is given mainly to maximum recycling and minimum detrimental impact on the environment.

LEISA does not aim at maximum production of short duration but rather at a stable and adequate production level over the long term. LEISA seeks to maintain and, where possible, enhance the natural resources and make maximum use of natural processes. Where part of the production is marketed, opportunities are sought to regain nutrients brought to the market.

Numerous developing countries are now implementing so-called structural adjustment programs that involve policies such as devaluation of exchange rates, reduction of government spending and intervention, reduction of subsidies and removal of price controls. In this way, the demand for imports is to be curtailed and the purchase of local goods stimulated, so as to reduce the balance-of-payment and government deficits and to promote national economic growth. LEISA appears to fit within this context, as it is less demanding on imports and credits than the conventional approach to agricultural development.

At farm, regional and national level, LEISA implies the need for closely monitoring and carefully managing flows of nutrients, water and energy in order to achieve a balance at a high level of production. Management principles include harvesting water and nutrients from

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SUSTAINABLE AGRICULTURE TRAINING TRENDS AND ISSUES

RURAL EXTENSION TRAINING: A changing perspective

During the last decade, development thinking has changed and so has been the thinking about communication. Very roughly speaking we can say that in the 50's and 60's, development thinking and programs were strongly influenced by the economic growth paradigm. Development can be seen from as a linear process, that can be measured in economic growth and in which 'modernization ' through transfer of funds and modern technology from highly industrialized countries to under-developed countries was seen as the key factor. Autonomous local development processes were supposed improbable or too slow anyhow. Gradually it dawned that under-development was far more complex and there was an increasing awareness of the one sided orientation, the ineffectiveness, and the lack of attention for the qualitative development. The idea of basic needs and integrated development began to draw attention. The importance of structural political and economic reform was stressed. The importance of popular participation in development programmes, indigenous knowledge and local organisations was recognized. Besides popular participation other important elements in the new concept of development are: the search for equal distribution of information and socio-economic benefits, social and technical adapted technologies and an emphasis on local resources .

CHANGES IN EXTENSION APPROACHES

In the days of the growth paradigm, communication and extension were generally seen as means of transferring information (diffusion) in order to persuade the people to accept and use the technological (and related social) innovations. Mass education were seen as very important. Non adoption of the innovation was blamed on the backwardness and conservatism of the people. Together with the revision of the development thinking a revision of communication strategies took place. Communication specialists became increasingly aware of the shortcomings of the diffusion of innovation model.

It became apparent that the non adoption of innovations had to be blamed on the socio-economic structure and/or the inappropriateness of the innovations to the actual conditions and needs of the population. Much more emphasis was given to the interpersonal extension methods, the identification of specific targets groups, the analysis of their socio-economic and ecological conditions, and to the development of technology suited to these conditions. It was recognized that communication and extension did not only imply information transmission and targeted behavioural change, but has to do with a wider educational function that might be called human resource development directed at socio-political transformation: conscientization, mobilization, farmers organization, participation in development planning, decision making and self reliance.

CHANGES IN EXTENSION WORKERS ROLE AND TRAINING NEEDS

The traditional definition of the extension worker's role was:

- to transfer technological information to the farmers **(broker)**
- To persuade them to adopt the innovations **(persuader)**
- to instruct them how to apply the recommendations correctly **(instructor)**
- to supervise credit, to gather statistical information, to supply inputs etc **(services and control agent)**

In many cases the latter functions occupied much more time and energy than the communication task.

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In participative extension approaches the role and tasks of the extension worker is defined as:

- mobilizer of peasant-awareness, initiatives and actions
- facilitator of group organizing , problem analysis, and planning
- stimulator of self-reliant and indigenous processes, and of a greater (collective) access to required resources, support and services.

The two role definitions lead to different sets of training needs:

Diffusionist	Group facilitator
knowledge of major (cash) crops;	social science techniques to analyze existing socio-economic structures and processes, to understand community and household needs and constraints, and to analyze indigenous knowledge;
communication techniques related to the transfer and demonstration of technical recommendations	mobilization and organizing skills ;
information on inputs supply, credit, marketing services;	adult education methods (e.g. literacy/numeracy and social skill training);
conveyance of information on production results and constraints to the superior	development anthropology.

Emerging integration

The introduction of the T&V sytem helped to integrate the two approaches by:

- linking agricultural extension to agricultural research and making both more adaptive to local ecological conditions and production constraints;
- improving the management and the efficiency of extension programs:
- stressing the importance of systematic and periodic training of extension staff;
- emphasising communication as a prime task of the extension worker and reducing the administrative, control and supply functions of the extension worker.

NB: Many NGOs had already started practising participatory approaches on their agricultural extension programmes.

THE ROLE OF DEVELOPMENT FIELD STAFF IN PTD

The main objectives of PTD are reflected in the main support roles of the field worker: the field worker seeks to assists farmers in the development of appropriate and sustainable agriculture technologies. In the same process the field worker seeks to enhance farmers capacity to innovate and to develop a sustainable farming system, and to develop local mechanisms that will enable them sustain the PTD process.

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The role to be taken by the PTD field worker include:

A Facilitator

This will include functions like:

- assistance in the diagnosis of existing problems in agricultural production and the maintenance of the productive resource base.
- assistance in the inventory of relevant indigenous knowledge and local ideas for potential solutions for the identified problems and other local resources relevant for the development of a sustainable farming system.
- assist in farmers criteria explicit and in the selection of options to try;
- assist in making explicit farmers indigenous ways of experimentation and in the systematic planning, monitoring and evaluation of the experiments.
- Stimulate self organization and self management

B Liaison

- facilitate exchange amongst farmers experimenters in this area and elsewhere;
- develop linkages with the farmer organizations in the area and relevant support organizations;
- linkage with relevant source of information;
- stimulate increased participation of farmers in the formulation and assessment of formal research; feedback about farmers experiments to research.

C Educator and trainer

- enhancing farmers diagnostic capacity;
- revitalizing indigenous knowledge, cultural identity and self esteem;
- increase understanding of main processes at work in their agro-ecological system;
- facilitate development of relevant organizational and communication skills (problem solving, leadership development, functional literacy, pedagogy) of farmer trainers and PTD group leaders.

D Co-researcher

- contributing with ideas, potential solutions, research information whenever useful in the process;
- replicating farmer experiments under research control;
- additional measurements and observations by the field worker to enhance the reliability of the farmer experimentation;
- documentation of the whole process and the final evaluation of the socio-cultural and agro-ecological impacts;

E External advisor

- participation in planning and evaluation of group activities at request;
- support to group leaders;
- assistance at inter-village level;

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Required abilities of the field staff

The field staff require certain abilities in order to carry out the aforementioned roles some of this he/she will already have but some will require close training. Some of the required abilities are;

- self awareness: limitations and possibilities as a field worker ion technology development;
- a holistic way of thinking;
- respect for rural life;
- understanding village level social processes and communication;
- skills of dialogical and intercultural communication;
- knowledge of the principles of LEISA and of the possible ways of enhancing the sustainability of the farming system;
- how to assess technologies that merit further promotion, analyzing for equity in the social environment;
- understanding the socio-cultural and the political context within which these technologies are embedded and awareness of the different actors in the theatre of development and their respective interests;
- skills in working with community groups: enhancing their potentials with the respect to leadership, cooperation and management, and favouring horizontal decision making processes: awareness raising, motivation and conflict resolution;
- skills with respect to establishing communication links and encouraging of relations of collaborative support;
- and others

DEVELOPMENT OF SUSTAINABLE AGRICULTURE

Critical challenges identified by international networks meeting (1992)

- Management of networks
- Strengthening of training capacities
- Assessment of methods and approaches
- Marketing and certification
- Advocacy, policy lobbying, public awareness raising
- Defining roles of support organizations

TRAINING IN SUSTAINABLE AGRICULTURE

Assessment of constraints and weaknesses (workshop 1992)

- limited focus on bio-physical aspects
- lack of integrated understanding of SA development
- Little use of participatory training approaches
- lack of good well equipped and experienced, trainers
- Poor documentation and evaluation of training activities
- Limited exchange of training experiences
- Unavailability of training information
- difficult access to existing training information and materials

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TRAINING IN SUSTAINABLE AGRICULTURE

Assessment of constraints and weaknesses (IFOAM 1995)

- Difficulties in integrating indigenous knowledge and participatory technology development
- little use of problem solving educational approach
- follow up to training is often weak
- lack of funding
- lack of trained trainers
- lack of access to training materials
- lack of information on what other organizations are doing
- limited institutional capacity
- Rigidity of structure of institute

DIFFERENTIATING SA TRAINING

Objective	-encourage practicng of SA develop capacity to share SA knowledge stimulate interest to take supportive action
Target group	Farmers farmer promoters field staff managers/ coordinators students policy makers
Content	LEISA, Organic farming, permaculture Agro-ecological principles SA practoces and techniques Participatory research and extension Institutional, socio-economic aspects
Training approach	single training vs long term field oriented vs classroom training vs experiential learning fixed curricullum vs flexible, participant determined
Institutional setting	informal, ad hoc, on the job semi- formal, irregular, changing schedules formal fixed curriculum, govt recognized.

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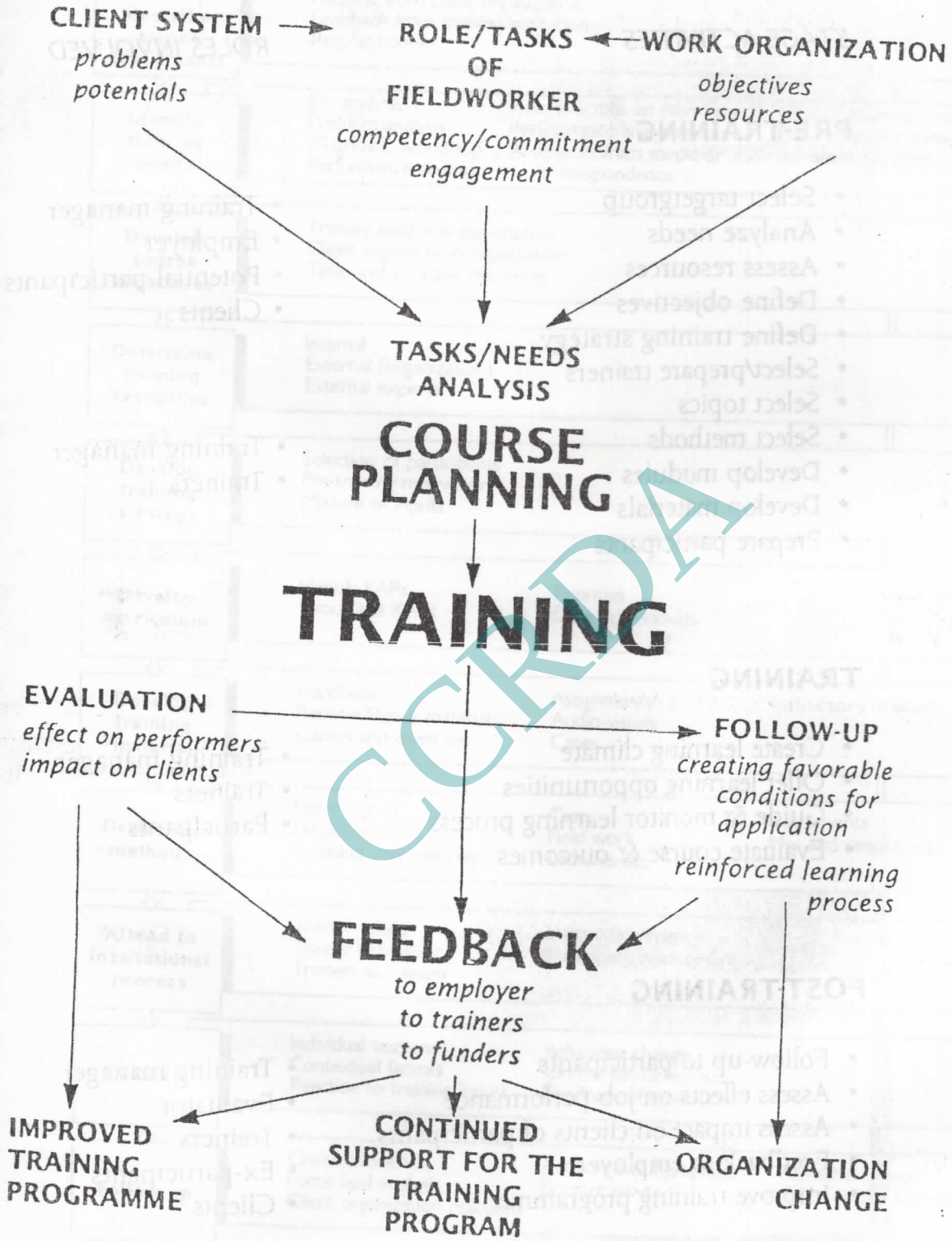
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THE TRAINING DEVELOPMENT PROCESS



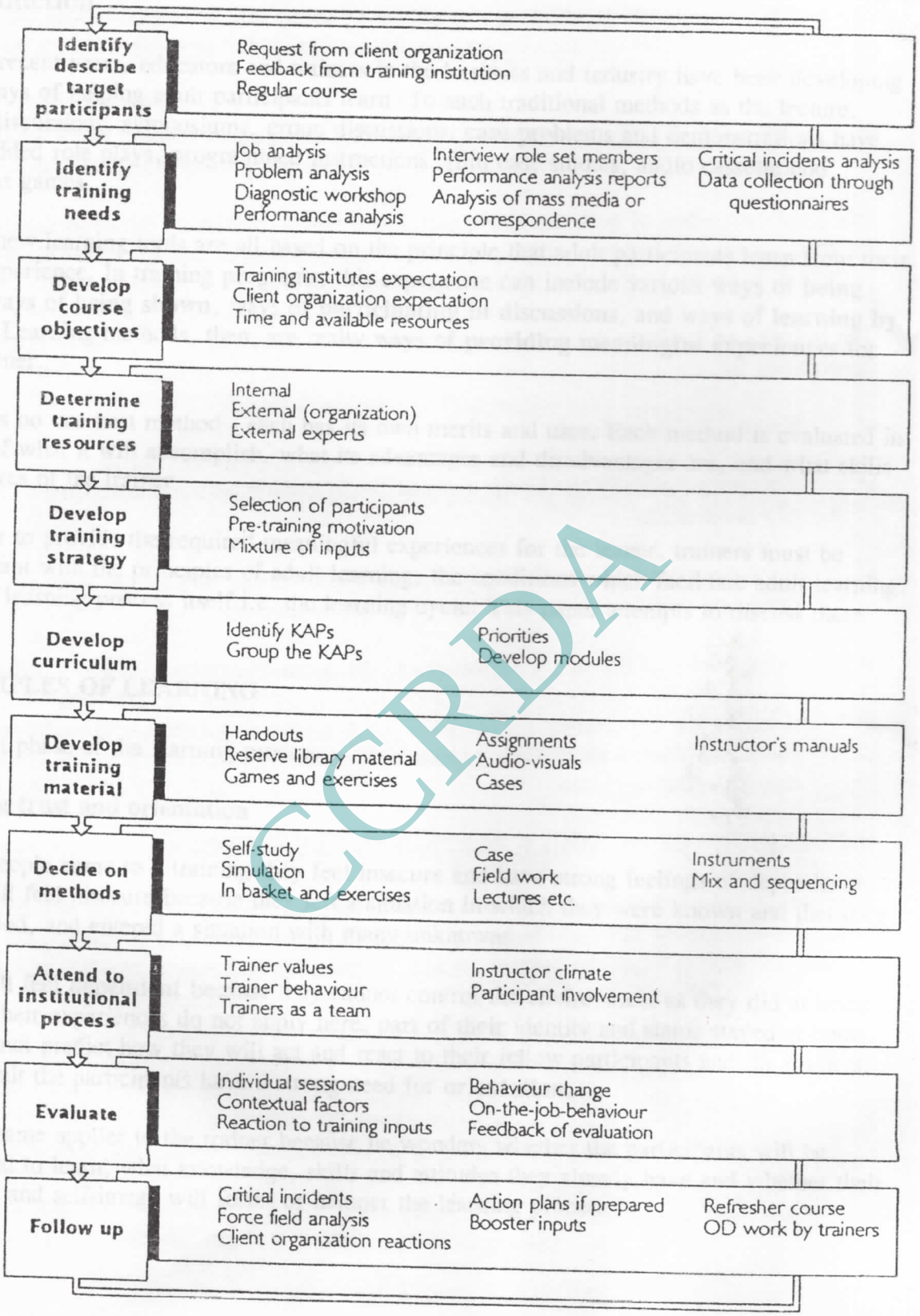
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THE TRAINING PROCESS

STAGE ACTIVITIES	*ROLES INVOLVED*
PRE-TRAINING	
• Select targetgroup • Analyze needs • Assess resources • Define objectives • Define training strategy	• Training manager • Employer • Potential participants • Clients
• Select/prepare trainers • Select topics • Select methods • Develop modules • Develop materials • Prepare participants	• Training manager • Trainers
TRAINING	
• Create learning climate • Offer learning opportunities • Guide & monitor learning process • Evaluate course & outcomes	• Training manager • Trainers • Participants
POST-TRAINING	
• Follow-up to participants • Assess effects on job performance • Assess impact on clients of participants • Feedback to employer • Improve training programme	• Training manager • Evaluator • Trainers • Ex-participants • Clients

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OVERVIEW OF SOME TRAINING MANAGEMENT FUNCTIONS



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ADULT LEARNING AND THE LEARNING CYCLE

Introduction

In the recent years, educators and trainers in the business and industry have been developing new ways of helping adult participants learn. To such traditional methods as the lecture, panel discussions, symposiums, group discussions, case problems and demonstrations have been added role plays, programmed instructions, film case studies, audio cassette and business games.

These new learning tools are all based on the principle that adult participants learn from their own experience. In training programs, this experience can include various ways of **being told**, ways of **being shown**, ways of **participating in discussions**, and ways of **learning by doing**. Learning methods, then, are really ways of **providing meaningful experiences** for the learner.

There is no one best method - each has its own merits and uses. Each method is evaluated in terms of what it will accomplish, what its advantages and disadvantages are, and what skills it requires of the trainer.

In order to provide the required meaningful experiences for the leaner, trainers must be conversant with the principles of adult learning, the conditions which facilitate adult learning, and the learning process itself i.e. the learning cycle. This paper attempts to discuss these issues.

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PRINCIPLES OF LEARNING

The first phase of the learning process:

Building trust and orientation

When people come to a training they feel insecure and have strong feelings of dependency. They will feel insecure because they left a situation in which they were known and that they understood, and entered a situation with many unknowns.

They will feel **dependent** because they cannot control the environment as they did at home. Part of their experiences do not apply here, part of their identity and status stayed at home, they cannot predict how they will act and react to their fellow participants and the trainers. As a result the participants have a strong need for **orientation.**

But the same applies to the trainer because he wonders whether the participants will be motivated to learn, what knowledge, skills and attitudes they already have and whether their attitudes and self-image will foster or hamper the learning process.

So to get started with the learning process, it will be necessary to build orientation on:

- ✔ The interpersonal or **process dimension** of the training; building on the social relationships and creating an atmosphere of safety and openness in which the participants feel comfortable and accepted, regain identity (and will be able to share information and concerns);
- ✔ The work or **task dimension** of the training: building consensus about what we are going to do and how are we going to do it (setting goals and organizing for action).

The combined effort of both the above mentioned issues establishes the basis for developing the trust, openness, honesty, and development of group norms and rules that orient the individual behavior in the group towards the common goal.

The trainer can facilitate the reduction of the initial tension and the feeling of insecurity and dependency by:

- ✔ Being open to feedback.
- ✔ Accessing carefully the learning needs of the participants and designing the training to suit these needs.
- ✔ Use group dynamics to help participants become more sensitive to how others see them and more realistic about how they see themselves.
- ✔ Being aware of the strong influences of the room arrangement and the group size.
- ✔ Creating the opportunity for the participants to get acquainted with each other, to share information about their experiences, ideas, values, and about the issues which they consider important.

KEY PRINCIPLES OF ADULT PARTICIPANT LEARNING

Developing and conducting an effective training program should be guided by certain principles of learning that have been established through research by psychologists and other learning experts. It would be helpful for anyone planning to become an adult teacher to review some of these principles.

Adult learning occurs best when it:

- ✔ **Is self directed**
  Adults can share responsibility for their own learning because they know their own needs.

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✔ **Fills an immediate need**
Motivation to learn is highest when it meets the immediate need of the learner

✔ **Is participative**
Participation in the learning process is active not passive.

✔ **Is experiential**
The most effective learning is from experience; learners learn from each other, and the trainer often learns from learners.

✔ **Is reflective**
Maximum learning from a particular experience occurs when a person takes the time to reflect back upon it, draws conclusions, and derive principles for application to similar experiences in the future.

✔ **Provides feedback**
Effective learning requires feedback that is corrective but supportive.

✔ **Shows respect for the learner**
Mutual respect and trust between the trainer and the learner help the learning process.

✔ **Provides a safe atmosphere**
A cheerful, relaxed person, learns more easily than one who is fearful, embarrassed or angry.

✔ **Occurs in a comfortable environment**
A person who is hungry, tired, cold, ill or otherwise physically uncomfortable cannot learn with maximum effectiveness.

THE LEARNING CYCLE

In the learning cycle the following steps can be distinguished:

1. Orientation

The learning process starts with the clarification of the subject and the reasons why improvements of the knowledge and skills in this field is important. The orientation can be facilitated by giving participants an opportunity to get a clear idea about **what** will be dealt with, *presenting participants a typical case of the subject/problem under study* (orally, on paper, in a film, with slides or in a socio-drama, etc.) and clarification of the terms that are used to describe the subject/problem. The orientation is not complete without development of a clear and shared learning perspective: **Why** is it important to discuss this subject, with what purpose do we want to develop our knowledge and skills in this field? What are our views on how the situation should be? Participants should also develop a clear and shared understanding of **how** the learning process will be organized.

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2. Generation of participants concrete experiences: description of the problem situation and the actual practices.

Participants describe and exchange their individual experiences in this field and/or with this problem: What did each individual observe or experience? Where, when, how? Under what conditions (physical, institutional, social) did it happen? What consequences did they observe? How do they handle such a situation normally? What did they do to solve the problem and, how did it work out.

3. Diagnosis of the experiences; reflection on the experiences.

Participants compare the emerging picture of the actual practices, the conditions under which these practices are developing, with participants' views on the situation as it should be; what is the gap between the actual and the desired situation, and between what we do and what we should do?

Secondly, by structuring and comparing the generated experiences and by logical thinking, the participants diagnose the problem situation/the actual practices: what are the main differences and convergences? What are the major aspects of the problem/subject? Which causes can be identified; what are their inter- relations; under what conditions do these become effective? Why did this solution work here and not there?

4. Conceptualization and the formulation of learning objectives.

The emerging knowledge about problem causes, relations/processes and possible solutions is systematized and labeled, leading to a set of concepts/hypothesis concerning the nature of the problem key elements, causes, possible solutions and a more precise definition of the questions and tasks to be dealt with in more detail: Aspects that need further analysis, skills to be developed, sub-problems needing additional information, etc.

5. Focused learning activities

The participants dig deeper into the subject, gather additional information about selected aspects of the subject analyze the sub-problems, practice specific skills, and experiment with certain solutions (technical/behavioral).

Participants are actively involved in a problem-solving process: they critically review selected texts, analyze case studies, do field work, analyze and interpret available records, conduct and evaluate small experiments or any other activity that may lead to the development of relevant insights and skills.

6. Integration and translation to the work situation

The main findings of the learning process are integrated and reviewed for their relevance and the feasibility in the specific conditions of he individual participants as described/diagnosed in step 2 and 3: the training cycle is becoming full cycle. Participants prepare themselves for the development of new working practices (his/her own, of the institution, of farmers) in the home situation.

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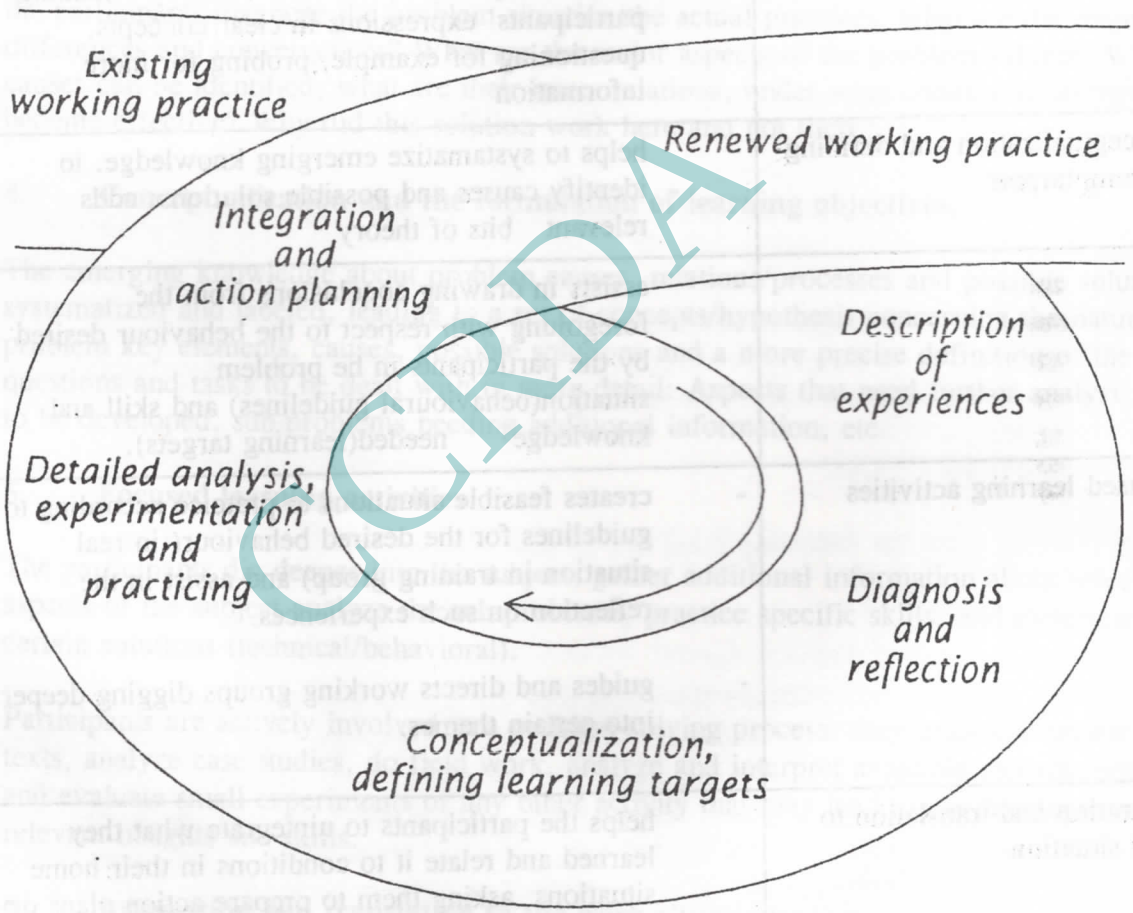
THE TRAINER AND THE LEARNING CYCLE

The learning cyle	The trainer's assitance
Orientation	- gives examples and asks questions to let the participants clarify the problem - assists to clarify the subject is important, what will be learned and how the process will be organized
Generation of participoants experiences	- stimulates memory by asking specific questions, by giving specific task assinment, or by making participants experience the problem situation through stimulating games - helps to express experience clearly by renaming participants' expressions in clear concepts, questioning for example, probing for more information
Conceptualization and defining learning targets	- helps to systamatize emerging knowledge, to identify causes and possible solutions; adds relevant bits of theory
	- assists in drawing conclusions from the foregoiung with respect to the behaviour desired by the participants in he problem situation(behavioural guidelines) and skill and knowledge needed(learning targets).
Focused learning activities	- creates feasible situations to pratcice according to guidelines for the desired behaviour(in real situation in training group) and assist in the reflection on such experiences. - guides and directs working groups digging deeper into certain themes.
Integration and translation to work situation	- helps the participants to uintegrate what they learned and relate it to conditions in their home situations, asking them to prepare action plans or organizing a debate in which trainees have to defend a certain approach or explain concepts in front of a critical audience

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THE LEARNING CYCLE

The learning process based on learning by experience can be visualized as follows:



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How Adult Participants Learn

Tae Sohn

In recent years, educators and trainers in business and industry have been developing new ways of helping adult participants to learn. To such traditional methods as the lecture, panel discussions, symposiums, group discussion, case problems, and demonstrations have now been added role playing, programmed instruction, film case studies, audio cassettes, and business games.

These new learning tools are all based on the principle that adult participants learn from their own experience. In training programs, this experience can include various ways of being told, ways of being shown, ways of participating in discussion, and ways of learning by doing. Learning methods, then, are really ways of providing meaningful experiences for the learner.

There is no one best learning method - each has its own merits and uses. In-House courses include a broad variety of learning methods, which reinforce each other to achieve the learning objectives of the course. Each method is evaluated in terms of what it will accomplish, what its advantages and disadvantages are, and what skills it requires of the teacher.

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Source: EDI-course notes, Washington 1978.

Key Principles of Adult Participant Learning

Developing and conducting an effective training program should be guided by certain principles of learning that have been established through research by psychologists and other learning experts. It will be helpful for anyone planning to become a adult teacher to review some of these principles.

1. Learning means change. Learning takes place when there is a permanent change in behavior. This involves many different changes, such as changes in:
   - Knowledge
   - Understanding
   - Skills
   - Interests
   - Values
   - Sensitivities
   - Attitudes
   - Perceptions.

2. To induce a specific kind of change, certain methods are more effective than others. For example, to change attitud or interests, a lecture or a reading assignment is likely t be less effective than an involvement experience in which t participant works out his or her conclusions.

3. No change is likely to take place unless the participant wants it to - or in other words, is motivated to learn. For example, without a participant's awareness of a proble to be solved, he or she has no motivation to change. Hence, to get the process of change started, there must be a wish

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to know something new, to be able to do something participant has never done before, to apply participant's skills to new situations, or to combine some of participant's old behavior or skills into a new skill or a new understanding. Furthermore, participant must generally have a clear idea of what it is participant wants to happen. Without that clarity, participant will never know if it is happening.

4. Learning is an internal process that involves a reintegration of the participant's experience. This means for example:
   - Learning is most likely to occur when it is based on the participant's experience and meets the participant's needs.
   - To be effective, learning methods must build upon the participant's present knowledge and attitudes.
   - From the same learning method, different participants will learn differnt things in different ways and at their speed- for each will relate their learning experience to their own values, beliefs, and previous experiences.

5. Learning is a thinking process. This means that:
   - participants are helped to learn by being made to think.
   - One way participants are made to think is by being given the responsibility for working out their own conclusions.

6. Learning is largely an associative process of relating one thing to another.
   - Participants relate new learning to something previously learned.
   - Participants relate new learning to their previous experience.

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7. Participants learn by application - by trying to do new things, by testing their learning against their own experience, feelings, and opinions or against the experiences, feelings, and opinions of others.

8. Learning through understanding tends to be better retained than learning by rote. This means that rather than mechanistic memory, learning through participant's understanding can better be maintained.

9. Repetition can often help learning. There are many reasons why the repetition is frequently helping the participant's learning. For example, some difficult subjects in the lecture, the problem-solving group sessions, cross-culturally different participants, and communication and hearing problems need the repetition.

10. Generalized learning tends to be transfered to specific situations only when the participant perceives its relevancy. This means that:
    - The more specifically general principles can be practically applied in a learning situation, the more likely the participant is to apply them on his or her own.
    - An opportunity to practice new learning free from fear of failure increases the likelihood that the participant will try to use the new learning.

11. Learning is often resistant when it means replacing comfortable, established attitudes and ways of doing things with new attitudes or ways of doing things. Such resistance can be lessened by:

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- Making the participants feel that they are respected as individuals and have the right to decide for themselves whether to change their views.
- Giving the participants an opportunity to reinforce their new learning with successful experience in applying it.

12. To be adult participant means to be self-directing in contrast to the dependent student role. This means that:
    - Mature adults want to use their initiative in learning situations and they want to be independent rather than dependent.
    - Self-directed learning results in more and better learning, longer retention and greater use of newly concepts.
    - The pre-requisite to self-directed learning is a warm climate of mutual trust to make the participant secure in his new role.

13. As adults grow older their senses are slower. They lose confidence and they get more conservative. On the other hand, they have better judgement, knowledge and experience. They get more efficient even if they get slower.

14. Learning needs time for processing information. If the information overload occurs the learning stops. For example, learning programs should not be crowded with too much content. Adults in particular need some time to adjust themselves to shift in attention and pace.

15. Emotions play a key role in the readiness to learn. Negative factors such as unpleasent associations, anger, anxiety, and fear prevent learning. For effective learning, both security and stimulus are essential and the participant needs both dependence and independence.

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16. Learning and the self-concept. This means that:

- Learning is related to the participants' self-concept (new experiences are organized in relation to the participant's self-concept and new information will be denied if it is perceived inconsistent to their self-concept. The participants listen, see and perceive selectively.).
- The participant reacts to experience as an organized whole.
- Learning is an attempt to satisfy needs.
- The behavior of a participant can only be understood from his own point of view.
- One aspect of the self-concept is our level of aspiration
- If the participants perceive a threat from learning, they will protect their self-concept.

17. Participants will persist in a task if they continue getting need satisfaction from learning. With new subjects, the participant is in the role of an explorer. If a preliminary answer hinders the discovery, much of the satisfaction of learning will be dissipated.

18. Learning is enhanced if it starts at the level of the participants and then proceeds to more abstract things. The pace must be adjust to the participant's capacity.

19. Reality situations let the participant test his learning and leads to changes in behavior in practice back home.

20. In the process of learning, there is a circular effect of morale and efficiency.

- Good morale gives feeling of accomplishment.
- This leads to increased effort and higher production.
- Conversely - low morale leads low production.

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21. Learning must be purposeful. This means that:
- First, learning must make sense to participant.
- Progress must be constantly appraised and redirected.
- Purpose must be kept in sharp focus.

22. Early success in learning helps build confidence in further learning for application and practice.

23. Learning is an experience which occurs inside the participant and is activated by the participant. The process of learning is primarily controlled by the participant and not by the teacher. Participant learn when they are personally involved in the learning process.

24. Communication in the process of learning.
- A participant tends to choose to listen to message that confirm his present attitudes.
- A participant believes communications from someone he trusts and feels it is reliable.

25. In the process of learning, the participant should have an opportunity to raise his doubts, air his misunderstanding and become involved in verbalizing the subject.

26. The key to learning is engagement. The participant engages in his purposeful learning in relationship to environmental factors such as the awareness of his self-concept, the task of subject matter, the teacher, physical facilities and social climate.

27. Learning is affected by the physical and social environment. This means that:

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- The general physical set up should be suitable to the kind of learning taking place and to the activities selected for use in the learning situation.
- Specific physical factors of the classroom should be suitable to the kind of learning taking place.
- The teacher should recognize and utilize the effects of the social environment on learning.

28. Learning is a cooperative and collaborate process. Cooperation fosters learning. Two participants are better than one. Cooperative approaches are enabling participants to learn to define goals, to plan to interact and to try group arrangemon in problem-solving.

29. The process of problem solving and learning are highly unique and individual. Each person has his unique style of learning and solving problems. Some participant styles of learning and problem solving are highly effective but others are not as effective. An participants become more aware of how they learn and solve their problems and become exposed to alternative models used by other participants they can refine and modify their personal styles so that alternative models can be employed more effectively.

30. Learning should have an emphasis on cooperative evaluation and self-evaluation. If learning is a personal process, then participant need the opportunity to formulate the criteria to measure their progress. The participants can see themselves as they really are and with the help of their peers.

31. Learning activities must be arranged to provide for:
- Anticipating apprehension and resistance,
- Gaining and holding attention,

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- providing for clear exposition,
- Allowing two way flow of communication, and
- Ensuring testing, application and appraisal.

32. Think about learning - not teaching. This means that:

- The teacher should provide meaningful and practical information for participant's learning.
- It further means the mutual learning rather than one way teaching.

33. Role and responsibility of teacher in the process of learning.

- Role of teacher:
  a. Understand his own motivations (wishes).
  b. Recognize consequences of our behaviors on others.
  c. Consequences of the behavior of others on us.
  d. Most of us have not developed the ability to listen.
  e. We resist accepting suggestions.
- Responsibility of teacher:
  a. Understand goals.
  b. Respect participant's personality.
  c. Plan the environment.
  d. Encourage full participation by all participants.
  e. Versatility in choosing methods and media.
  f. Awareness that learning should be satisfying and free of compulsion.

34. Learning should have a process of presentation with goals and evaluation. This means for example that the teacher must bear in mind:

- First, climate setting,
- Second, planning how to plan,

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- Third, diagnosing needs for learning,
- Fourth, setting goals,
- Fifth, designing a learning plan with resources and strategies,
- Sixth, encouraging in learning activities, and
- Seventh, evaluating learning outcomes.

35. Adults expect to take an active role in the selection of what they are and how they are to study. For example, in how they are to study several learning methods are presented below:

- Role of lecturer:
  a. The advantage is to organize facts and ideas and present them in an orderly way with a minimum of time and effort.
  b. Skills or processes can better be learned by demonstration.
  c. Lecturer should consider motivation of the participant, relevance to the participant, attainment of satisfaction by the participant, and the extent to which it is a two-way process.
  d. The speaker should be introduced to engage the attention of the learner by showing how his message is related to their goals.
  e. After a lecture, it is a good idea to divide up into groups of four to six persons to discuss the message and to decide on several questions to ask the lecturer.
  f. Another way to gain attention is to assign a task to the participants.

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Participatory Training

The participatory training approach encourages participants to see themselves as a source of information and knowledge about the real world. Participatory training refuses to accept that people do not know anything. Participatory training recognizes the value of popular knowledge and encourages people to participate in their own learning process. When they are encouraged to work with the knowledge they have from their own experience, they can develop strategies together to change their immediate situation. The process of learning during participatory training is controlled by the participants, and not by the trainer. The trainer plays the role of facilitator in this learning process. This process of involving participants in the learning process gives them a sense of empowerment: they start recognizing their existing knowledge and its value. For this methodology, the synthesis of popular knowledge strengthens the educational experience of the participant. As they begin to appreciate what they already know, they are more open to seeking new knowledge, and they actively share in the collective responsibility for seeking new knowledge, which enhances the learning process. Thus they get a feeling of ownership of that knowledge. Participatory training becomes a tool, a strategy for social change when people start valuing the process of collective analysis.

So the first task of participatory training is to create an understanding that change is possible, that it is possible to change one's situation. The second task is to enable individuals and communities to identify what types of change they wish to achieve and how to go about attaining that.

Theoretical Understanding of Participatory Training

People cannot be developed; they can only develop themselves. For while it is possible, for an outsider to build a man's house, an outsider cannot give the man pride and self-confidence in himself as a human being. Those things a man has to create in himself by his own actions. He develops himself by what he does; he develops himself by making his own decisions, by increasing his understanding of what he is doing, and why, by increasing his own knowledge and ability, and by his own full participation -- as an equal in the life of the community he lives in.

---Julius Nyerere

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Participatory research methodology, as an approach within adult and popular education, has more recent past. It developed in response to the inadequacies in the conventional research methodology in the field of adult education during the 1960s. Adult educators and other concerned social scientists struggled to develop a research and educational methodology which would lead to a practical, effective response to the realities of under-development.

Thus, the principles and methods of participatory training are derived from many theoretical disciplines within the social sciences. Basic principles of adult education are a central foundation of participatory training. These principles assume a commitment to adults participating actively in the world, deciding what they want to learn and the best way to learn it. The out-dated notions of too old, too poor and too primitive to learn are rejected in participatory training.

Ideology of Participatory Training

The starting point for understanding the underlying framework is a world view. How does a society function? A historical analysis of present society indicated that a large number of people are poor, unorganized and oppressed, and a few are rich, powerful and dominant. These two sets of people have conflicting sets of interests.

The social relations between these two sets as classes of people determine how a society functions. Social transformation occurs when the poor, dominated and oppressed people develop collective organization and act in their common interests. And the process of social transformation thus becomes an ongoing struggle.

It is in this context that the role of knowledge becomes critical. Firstly, the oppressed people mostly lack information, skills and the tools to acquire knowledge. Secondly, the dominant classes have increasingly used knowledge and information to maintain their domination. On the other hand, participatory research believes that people have knowledge and they can acquire knowledge. People's knowledge or popular knowledge cases may be authentic and accurate, and in some cases, it may not be so. Participatory training facilitates the recognition of popular knowledge. This process of recognition and valuing of popular knowledge contributes to the awareness raising and empowerment of the people.

It is in this context that participatory training has a meaning and contribution to make. The central question, therefore, is: whose interests should training serve? And the answer: participatory training must serve the interest of the poor and oppressed.

Hence, participatory training methodology is essentially a methodology of social transformation by the oppressed and the dominated, through the contribution of knowledge in creating awareness, empowerment and organized collectivity.

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Participatory Training: an Educational Process

Essentially, participatory training is an educational process which is based on the assumption of adult learning. The participatory training approach encourages participants to see themselves as a source of information and knowledge about the real world. When they are encouraged to work with the knowledge they have from their own experience, they can develop strategies together to change their immediate situation.

This educational experience takes places in several ways as described below:

1. Existing popular knowledge is recognized and valued.

   Participatory training starts from the assumption that participants already possess some knowledge which when synthesized with existing scientific knowledge strengthens the educational experience of the participants.

2. New knowledge is built on the existing knowledge.

   The starting point for creating new knowledge is the existing knowledge that people have, particularly the authentic elements of it. As people begin to appreciate what they already know, they are more open to seek new information and this enhances the learning process.

3. Participants learn to exercise control.

   Participatory training puts emphasis on the active participation of learners in generating their own knowledge. This encourages them to take responsibility for their own learning. It is this active posture which constitutes a powerful impetus for learning and for learners to exercise control over their learning.

4. It becomes a collective process.

   One of the elements of participatory training is the promotion of collective responsibility for seeking new knowledge. As a result, participants learn to get together, collectively seeking and analyzing information.

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5. It creates informed options.

The very process of collectively analyzing a given situation throws up various alternatives. As part of the process of analysis, options are debated on the basis of concrete information. This creates a sense of empowerment which is based on the confidence that information has been interpreted and understood.

6. Actions emerge out of this analysis.

The very act of involvement in the process of analyzing a given reality creates a sense of ownership of that knowledge and willingness to transform that situation. The participants are then able to take concrete action.

Principles of Participatory Training

Based on the preceding analysis, the main principles of participatory training are derived:

a. The primary principle of participatory training is that it is participant-centered. The training arises out of specific needs of participants articulated by them; it focuses on their objectives as opposed to trainers; and the participants maintain control and influence upon the methods of training. In essence, participation is both a basic value underlying this method of training as well as an instrumental requirement whereby trainees learn through participation. The participation of trainees determines content, location, duration and methods of training. It also ensures that the trainer is not seen as know-all but more as a co-traveller on the path of joint exploration.

b. The comprehensive nature of participatory training necessitates combined focus on awareness, knowledge and skills. Awareness of one's own situation and the overall socio-economic reality is important. Awareness-raising, therefore, has to be an important element of such training. Similarly, knowledge-acquisition is a very common objective of all training programmes. The actual combination of these three foci may vary from one programme to another, but every programme must aim at a minimum component of each of these three.

c. Another important principles of participatory training is learning through the experiences of the participants. This experiential approach relies heavily on the past experiences of the trainees. A systematic sharing of trainees' experiences related to the themes of training is undertaken. These shared experiences are then analyzed collectively by the trainees and the trainers together. Insights are then drawn from these for all. These principle underscores the need for valuing all types of human experiences and not placing prior judgements on their validity.

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d. Creation of suitable learning environment is a crucial consideration in participatory training. It has been observed time and again that trainees need an opportunity to first unlearn and then relearn. Both these processes can be highly threatening to a person. Learning implies acknowledgment of a current deficiency, and thus, resistance may develop easily. It is important that the learning environment be such that trainees are accepted as they are, feel psychologically safe to experiment and take risks, enjoy mutual support, and feel confident that whatever happens in training will not be used against them later. These elements of suitable learning environment are not easy to build and; therefore, it calls for a special attention on the part of the trainer. It is important to realize that such an environment does not develop automatically.

Another ingredient of learning environment is stimulation. A training programme must continue to be interesting and should continue to motivate trainees to learn. Lack of enthusiasm and interest can set in rather quickly and effort needs to be made to check such trends.

e. An important ingredient of training is its utility in day-to-day life and living. What is learnt in a training programme needs to be transferred to real life situations. Transfer of learning needs to be carefully planned as it does not take place automatically. In order to ensure effective transfer of learning to real life situations, the training programme must provide the opportunity to plan this transfer. It can be accomplished through a method of action-planning where participants identify a few problems in real life that they want to solve, plan for their solution and identify new insights being used in this solution during the last phase of the training programme. It is important that clear, conscious, and enough attention is paid to transfer of learning.

f. When participation is valued, training becomes a social event. Participatory training entails a social process where the training programme becomes a temporary organization. It is important that this temporary organization follows values, norms and principles which are congruent with the training objectives. This has to be consciously ensured.

g. Since participatory training is geared towards building a group or an organization, the focus of the training has to be a group. It is not then the concern to develop all skills and impart the same knowledge to all individuals but to ensure a distribution of skills and knowledge in such a fashion that all the required ones are available with the group as a whole.

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h. Finally the trainer's behavior is an important element in participatory training. While in technical training, the technical expertise of the trainer is the sole requirement, it is not so in participatory training. Here the trainer's own behavior and value system is equally critical. For one, the trainer needs to be aware of his/her own self and be sensitive to others.

Source: Training of Trainers: A Manual for Participatory Training Methodology in Development, Rural Institute for Social Education, Kuppam, India.

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Role of Training in Social Change

Society is characterized by a small section of the various kind of elite who own and control a large amount of resources (land, capital, machinery, etc.). This section is well-informed, powerful and well-organized, and dominates the economic, political and cultural life of the society. On the other hand, there is a vast majority of people who have no control over resources including their own labour. They are ignorant, weak and unorganized; they are the vast majority of workers, labourers, small farmers, tribals and women. Of course, there are several categories of people in between these two classes.

Given this structure of the society, the meaning of social change implies improvements in the lives of this vast majority of the people in the direction that they consider appropriate for themselves. Hence, the process of social change entails informing, mobilizing and organizing this vast majority of people such that they can identify, articulate and struggle for their common interests. Unless the poor and the weak become informed and organized to act collectively in their common interests, meaningful social change cannot take place.

Thus, social change implies:

- Conscientisation of the poor
- Empowerment of the powerless
- Organization of the unorganized

Training plays a crucial role in facilitating social change in the following ways:

1. Individuals can use the learning opportunity provided by training for personal changes, e.g., understanding

    - the dynamics of society and social change;
    - their own strengths and weaknesses; and,
    - their potential role in this process of social change.

2. Individuals can require relevant knowledge and skills through this learning opportunity to play their meaningful role in social change.

3. Groups and individuals can learn how to function as an effective team and a building block for the organization in this process.

4. Individuals and groups can experience, in a microcosm, the possibilities of participatory and democratic functioning during the training programme itself and thus learn to experiment with their own visions of an egalitarian society.

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The Responsibilities and Qualities of Trainers

I. Responsibilities:

Based on the goals of training in development, the trainer should have the following responsibilities:

1. to help the trainees understand the context of their work (what is the general and specific situation that they are trying to improve or change and how their work or job is going to help achieve that change);
2. to assist the trainees in acquiring the necessary knowledge, skills and attitudes needed in making their own decisions and being accountable for them;
3. to assist people in gaining adequate knowledge, skills and attitudes in performing their tasks well;
4. to help identify the trainees' potential and creativity and provide opportunities for these to be developed; and,
5. to create and provide the best learning environment for the trainees.

II. Qualities:

1. ability to analyze situation/problems
2. ability to communicate and relate to trainees of various levels
3. ability to facilitate participatory processes
4. sensitivity and respect for the trainees' interests and needs
5. patience, humility and flexibility
6. genuine interest in human and community development
7. creativity in training techniques/methodologies
8. mastery of the subject matter to be taught

Source: Ockelford, Jane Bañez. Partners in Creative Training: Training of Trainers in Cambodia, PACT Cambodia, March 1995.

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Trainer Roles

PRE-TRAINING	DURING TRAINING	POST TRAINING
1. Training Designer Identifies and translates learning needs into objectives, content, and designing the programme	**1. Facilitator** Guides the learning process so that individuals learn from each other and the group functions effectively	**1. Report-Writer** Prepares a report of the training programme
2. Administrator/Organizer Ensures and plans in advance the facilities, learning materials, required equipment, participants and other related components of the training event and the coordination of the programme logistics	**2. Instructor** Prevents information and concepts, clarifying objectives, creating and sustaining a structured learning environment and helping generate new learning	**2. Follow-up Coordinator** Continuously contacts with individuals and their organizations to assess impact of training on the organizations and individuals and providing the necessary follow-up support whenever needed
	3. Counsellor Supports and guides individual trainees during periods of stress and strain and helping trainees to assess their potentialities and personal competencies, so as to enable them to reflect, grow and change	
	4. Recorder Maintains records of the process and content to enable monitoring, analysis and documentation	
	5. Evaluator Asseses the impact of the training programme on the trainees	
	6. Organiser/Administrator/Manager Manages all the related tasks during the programme, managing time and space boundaries	

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4 Basic Functions of a Facilitator

1. Emotional Stimulation

   Helping others to contact and release feelings, challenging confronting and serving as a catalyst for interaction.

2. Caring involves accepting, undertaking, and supporting others, experiencing warmth and affection as a model for others and helping others to develop intimate relationships.

3. Meaning Attribution

   Calls for giving meaning to experience helping others to understand and acknowledge the source of their feelings and actions and focusing group attention in significant interactions.

4. Executive Function

   Reviewing ground rules, exploring group processes, gate keeping, and handling the general logistics of group meeting.

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SUSTAINABLE AGRICULTURE TRAINING STRATEGIES

TRAINING STRATEGY

The concept of training strategy means that some choice between alternatives has to be considered. In this field of education still too often this choice is not made consciously: In most cases training is done in a rushed manner; The training has to be done, so a training curriculum is developed and a course is organized in which lecturing seems the only way to get through the syllabus. The training strategy(in this case the selection of a course as the only training event and the choice for expository methods of training) was not consciously chosen and the underlying assumption that (in this case exposing trainees to the subject matter will be enough to change their behaviour in he field) are no stated.

A training strategy explains *why* a certain combination of methods and means is selected in order to reach specified objectives. Explains why *emphasis* is given to certain type(s) of training events and supporting activities. Each strategy is based on certain *assumptions* regarding learning and change in general, and the best way to realize a particular set of objectives in particular, given certain target group(s) , available resources, the socio-political context and other working *conditions*

General level

At the general level training strategies are often presented as alternative approaches:

The training e.g. may be directed primarily towards the development of the *person* rather than training for a specific *job*, assuming by developing general skills and understanding will make him/her more open, flexible and able to adapt to new tasks and changes in present tasks. Another strategy may be directed mainly at organizational development, assuming that involving staff in working on organizational needs for the change will result in according changes in individuals.

One strategy may focus on *knowing/theory and facts* e.g. through distance education. Another will focus on *action/practical skills* e.g. on through the job training. Again another may focus on *attitude/aspirations /values*.

Strategy A may emphasize strongly the training of *individuals* in certain knowledge of skills; Strategy B will emphasize training of *groups* having a relation with a certain problem, task, process or product.
The training may seek strong formal linkages e.g with manpower and career planning or to the contrary may seek an informal position e.g with a strong emphasis on intrinsic motivation for development.

Specific level

At the specific level a training strategy explains the selection and combination of certain type(s) of training and supporting activities in the light of the training objectives, the target group and the resources available.
'Do we need a *course, seminar or workshop* or should we organize *periodic* training and exchange *meetings*, or would it be better to organize regular *correspondence training*

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eventually combined with periodic *tutorials*. Should some form of apprenticeship be built in? Are there reasons to develop the straining in *stages*? What pre-training activities do we need? What *post-training activities*? WHY?

Some questions to assess Training Strategies

- What are the underlying assumptions?
- Do you think a programme based on this strategy will be effective in the context and under the conditions given? Will it realize the desired changes?
- Will the training strategy lead to an effective training programme? Does the plan use minimum inputs to realize the required changes? Is the programme realistic in its assumptions regarding availability of financial, human and other resources?
- Does the strategy relate well to the characteristics and conditions of the potential participants?
- Is the plan flexible? Will it still work under scarcity conditions?

Sustainable agruculture training strategies

During a sustainable agriculture consultative workshop for trainers in sustainable agriculture held at IIRR in 1995 in the Phillipines, the following strategies for SA were identified together with their strong and weak points:

Strategy : INDIVIDUAL T AIL OR MADE SELF-STUDY

+	-
• Directly built around 1 participant's training needs only. • No need for compromises with other trainees. • All learning directly linked to participants work situation. • Very flexible in content. • Also very flexible in training and methods rythym.	• Necessary in a (good) variety of resources (training materials, documents, experiences trainees) that can be tapped into (accessible resource center) • Participant must leave a good experience and/or understanding with work situation; not for people just about to slant working • Availability of various "trainers" as need arises in view of their other commitments • Costly (?)

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Strategy : TRAINING COMMUNITY MEMBERS TO BE TRAINERS

+	-
• Develop of skills (not only techniques, but also social and personal skills) • contribution to improve the pool of knowledge that communities has as a whole. • Promotes a personal change in the farmers involved self esteem • Good way to promote changes in productive management and social relations inside.	• Can develop an "elite" in the community • there are some special requirement demanded by the farmers that have been trainers assessments for investment in their farms, new technologies and new subjects and that the trainers can not satisfy • It involves too much time for farmers and sometimes they have to select between the training and their family responsibilities.
Considerations: • To consider different types of members of the community as; women, young people, old people, couples, teenagers. • It must be complemented with strategies farmer to farmer.	

Strategy : FARMER TO FARMER

+	-
• Low cost • Massive impact • To further the self development in the people.	• Is not easy to choose the farmer (promoter) • The technician needs knowledge about the SA and the methodologies. • Needs a holistic approach.

Strategy : VILLAGE-BASED TRAININGS FOR TECHNICIANS

+	-
• Places them in the reality of the farmer's context • Able use farmer's experiences as input to the training • Continue to develop better appreciation for farmers situation	• Participants may be a bit "uncomfortable" (poor accommodations, bad food, etc.)

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- Individual analysis of training strategies (positive and negative aspects)

Strategy : INTERNATIONAL COURSES FOR PARTICIPANTS DIFFERENT COUNTRIES/CULTURES TO LEARN AND SHARE

+	-
• Diverse, wealth of experiences on technologies and approaches because of the differences in the agro ecological condition • Socio-cultural exposure a bonus expands the way one should see SA • Realization that there are others like you who face the same difficulties in doing SA training • Diversity of experiences on many aspects. • Forms a good basis or establishing SA networks in the country/region. • When adequately prepared, a lot of information related to SA can be gathered and documented. • Different expertise could be further exploited to refine the training programme. • Sharing becomes the basis for regional needs/plans (what need to be addressed) • Sharings are based from own participants experiences (not simply lite nature or theory) • Appropriate for providing technical updates • provide change of environment • Time for an out of office/project reflection • Good for technical hands-on sessions	• Same topics/areas for discussions may not be relevant to some pax • Language difficulties/differences is a learning barrier • Some cultural/traditional practice do not encourage mixing/learning from others. • Follow-up difficult - visits, expensive communication problems, limited number can be visited. • Expensive to organize • Difficult to learn more about the participant, organization, environment (in order to make proper selection) • Wrong participants likely to come • Exercises, examples used may be in appropriate for all (emphasis on principals useful) • Limitation in terms of adjusting the course during implementation • Participants not stating their real expectations or having a different agenda for attending; not meeting communication requirements • TNA can be difficult and expensive • Difficult/expensive to follow-up • Difficult to prepare/orientate participants before the course • Sometimes action-plans are never implemented. • Time-consuming in preparation and logistics • Sometimes difficult to meet all participants expectations

Strategy : TAR-TAR

+	-
• Allows enough time for the participants to digest specific learning. • Provides opportunity to translate learning into action and assess the difficulties encountered during implementation. • Provides opportunity to discuss or reflect on the participants experiences during the implementation stage.	• Costly • Time consuming • Applicable only for small group of participants.

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Strategy : FOLLOW-UP VISITS TO PARTICIPANTS AFTER THE TRAINING

+	-
• Very powerful to strategy to strengthen learning and to enhance the field-level application of learnings from the training (both content and process) • Can provide continual technical back-stopping to individuals • Allows opportunities for trainers to "refresh their memories" of the difficulties encountered at the field-level by trained individuals.	• Sometimes very difficult to undertake due to: - costs - distances - time and effort

Strategy : BUILDING ALLIANCES/NETWORKS

+	-
• Promotes information/ expertise/resources exchange • Good for updating and technical sharing • Decision - making and action is decentralized. • Longer-term use. • Encourage proliferation of ideas.	• May need initial support to take-off. • Needs strong, committed and transparent characters

Strategy : CROSS VISITS FARMERS

+	-
• Helps re-confirm that SA is practiced by others also • Learning becomes effective seeing other farmers fields. • gives a feeling of doing something important. • Gives more confidence to develop oneself as farmer. • Sharing of planting materials	• Not everyone can avail this opportunity • Some frustration due to 1 above. • expectation keeps growing • Inclination of facilitator to select young unmarried school girls - resulting the event trip taken up not satisfactory.

Strategy : TRAINING AND MATERIAL DEVELOPMENT FOR CREATING SPACE IN FURTHER WORK IN SA

+	-
• Rigid and less flexible (e.g. GO) system(s) can be easily and slowly motivated • Create a pressure group within the less flexible system • effect is long lasting • Resources are guaranteed.	• Needs time and patience • Change of personnel(s) at the initial stage may be frustrating

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Strategy : COLLABORATIVE TRAINING ORGANIZATION/DEVELOPMENT

+	-
• Able to benefit/maximize from the experiences/resources of two or more institutions • Content is much richer and broader • The training is able to be based on a diversity of different institutional/programmatic approaches • Good for updating and sharing. • Decision making action is decentralized • Training organization, management, facilitation, etc. can be shared easing the burden on one individual/institution strengthen mutual cooperation. • Training institutions themselves learn from the process by observing/seeing other training approaches. • Longterm use • Help in resource mobilization.	• Coordination, roles and responsibilities need to be clearly spelled out or their can be confusion, gaps, overlaps or creates ambiguity. • Expectations from each collaborating organization should be very clear from the beginning. • Planning and preparation can be very difficult • Collaborating organizations might have conflicting views/opinions about some aspects of the training. • Post training follow-up of participants not clear. • Takes so much time in the development and coordination process.

* Analysis/opinion of four persons are incorporated/written here.

Strategy : FARM-FIELD SCHOOL E.G. IPM

+	-
• Learning is in the village. • Participant all from the same village • learning mostly in own fields. • Season-long, every weak, strong internalization. • Direct experience basis for learning • Flexible "content" depending on what actually happens in the field • Strong if NGO-GO link. • Focus on farmers understanding of cause-effect relationships, underlying principles, rationale • Encourage, experimentation as part of curriculum.	• Limited follow-up, or encouraging farmer institutions/organizations • costly (?) • Preparation of extensionist to become facilitators taken also 1 year/season - costly • Pests not occurring this season are not analyzed well. • Sometimes weak if only by GO. • Experiments some hues healed as demonstrations, farmer-own experimentation overloaded.

Strategy : DEVELOPMENT OF INFO KITS EASILY FOLLOWED

+	-
• Technical content comes from diverse groups, farmers, academicians, scientist. • Information are easily technically validated. • Readers learn on their own pace. • Readers can bring the kit in their form and follow the description of the process. • High level of satisfaction of outcome.	• Requires high level of motivation for readers to practice/do what is read. • Risk if failure is quite high due to misunderstanding some instructions. • No one consult with to clarify.

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Strategy : HAVING PARTICIPANTS AS CO-FACILITATORS

+	-
• Enhances participant's participation (positive feeling that they are contributing as well) • Enriches sharing by facilitator	• Requires careful planning and clear levelling-off (from both participants and facilitators)

Strategy : FARMERS AS RESOURCE PERSONS

+	-
• For farmers groups. it gives them confidence. • They are very good at practical demonstration. • They introduce folk wisdom to SA. • They are able to give you detailed explanations regarding the technology they know.	• The teaching is limited to the practice of the farmer. • Very often eco-region specific. • Since they have to depend on farmer's for livelihood the participation in training is seasonal. • They need to learn how to _____ equipment in class room teaching.

Strategy : FLEXIBILITY OF COURSE DESIGN TO ALLOW PARTICIPANTS TO DEVELOP OWN MATERIALS

+	-
• It can ensure real participatory process in the training. • Participant become more analytical and creative. • Opportunity to develop/discover more appropriate training material • quality of work is very high • Satisfaction level of participants is usually very high • The process allows participants to think critically about the topics being discussed.	• Flexibility may lead to relevant discussion to kill the time. • Requiring experienced participants • Requires commitment to the process on the part of the participants. • Takes time in the design itself • Requires available expertise to facilitate/help participants through the process of designing the activity.

Strategy : CURRICULUM DEVELOPMENT

+	-
• All government officials exposed to the idea • Reaches the nuclease of education. • Allows for examples to be established. • Allows for reference material and training material to be developed. • Allows for all people's involvement i.e. school teachers, head office personnel, community, students. • Results can be for reaching and involving.	• Too much bureaucracy (interference) • Some generally think they cannot be influenced by change from NGOs. • Takes rather long to establish results.

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Strategy : ROVING TRAINING OR WORKSHOP

+	-
• Opportunity for exposure to a number of different agro-ecological and socio-economic conditions in a very brief time • Participants are better able to "relate" to a particular agro-environment which may be similar to their own situation back home. • Able to see a diversity of institutions and approaches in one training activity • Diversity of agro-ecological conditions visited, allows that the content can focus on principles rather than on specific technologies. • First-hand, direct, on "on-the-ground" experiences are seen and heard from the people doing the field • Easy to convince other farmers through practical demonstrations • Operation cost minimum (low cost) • Sustainable • Good training method • Farmers can recognize the "reality" • Good opportunity for exchange of experiences (especially between farmers)	• Market/profitability domination over system/approach/techniques of SA • Unable to include long term elements if unable to meet immediate needs. • Short gestation against long gestation through it may have performance in system over time. • Low risk taking capacity • Takes much longer for a complete system to develop. • Dependent upon set of specific socio-economic and agro-ecological environment.

Strategy : SCHOOL ON THE AIR/RADIO PROGRAMS

+	-
• Media as an broad area medium • In local dialect • General scope-general listeners • Interest and attention is assured • Good if "healthy feedbacking" will be done at a venue for listeners and enrollers • Cheap medium for the listeners • Really mass based • Easy to enter if it is church-run diocese or parish runned in our case) - progressive and developmental VMG of the radio institution	• Expensive for the broadcasters/sponsors • cause misconceptions if "technical terms are not popularized" • Writes (script) and hosts should have a technical background • If feedbacking broadcasting not followed - a lot of problems arise and participants will be hung-up • Can be used for source of info by counter SA interests • Field - based support systems and follow-up should be established - (needs an institution which is credible and long staying in the area) • Conflicting broadcast within the same radio station (eg. SA program vs. chemical advertisements)

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TRAINING NEEDS ASSESSMENT

ASSESSMENT OF LEARNING NEEDS

Why learning needs assessment?

Analysis of *organizational and individual learning needs* and the *characteristics of the potential participants* provides the basis for the development of the training programme.

We implement such an assessment in order:

- to focus learning on *what is really important* for the job *and* the individuals involved (and not yet known by the participants) and to avoid that we try to solve problems with training that are not solvable by training alone. That is to say: in order to be able to formulate relevant and realistic learning *objectives*.
- to be able to develop an effective training *strategy*, select appropriate training *methods* and to arrive at appropriate *arrangements* for training (timing, duration, food, place, setting, group composition, etcetera) well adapted to the needs and circumstances of the participants.
- to assess the need for *required support and follow-up* after training.

How to define a training need?

A training need is well defined when we can describe clearly:

- what (type of) *persons*
- have what kind of *problems*
- in performing which *tasks*
- implemented to achieve which *aims*;
- whether those problems are *amenable to training*, that is to say (at least partly) solvable by inducing certain changes in Knowledge, Awareness, Skills, Aspiration (KASA) of the persons involved.

Whose needs are we talking about?

In the decision making about training of extension workers the following actors (may) play a role.

a organization and the programme with its goals and resources, requiring certain tasks and competencies;

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b the client groups, with their specific needs and interests and who may have different ideas about what the extension workers should do;
c the extension workers (potential participants) with certain degree of competence and motivation, and who have their personal interests and their own views on what the job requires;
d the trainers with their own qualifications, interests and hobby horses, and who may tend to perceive only those needs they feel competent to deal with and gives high personal pay-offs.

In order to be effective organizers of training should take all four perspectives into account. Organizational and individual needs should match to a large part for training to become effective: a. learning is an individual and voluntary activity, and the participant can not be forced to learn and (structurally) change, b. the training will be wasted unless the organization creates the conditions within which the trained person can apply what he/she learned during the training.
This is why effective training and education of extensionworkers often is approached from the broader perspective of organization development.

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WHAT AND HOW TO ASSESS?

ASPECTS OF NEED ANALYSIS

Programme analysis
- what is the philosophy, approach and methodology of the programme
- how is the role/job of the extension worker defined in this perspective
- what is the main aim of the training; clarify motives

result ⟶ *clear focus and context for the training*

Job analysis
- what are the tasks to be performed in this job
- determine which tasks are most important for good job performance

result ⟶ *critical tasks to be performed*

Task analysis (esp. critical tasks)
- what steps/components are involved in each of the tasks
- what are the most important ones?
- what are the facts, skills and attitudes related to each task
- define minimum standards

result ⟶ *required KAS for good job performance*

PERFORMANCE/GAP ANALYSIS
- assess the actual performance of potential participants
- define gaps in KAS of the potential participants.

result ⟶ *"objective" training needs*

NEED ANALYSIS
- asses the training needs as perceived by the potential participants

result ⟶ *"felt" needs*

ANALYSIS OF TRAINABILITY
- which performance problems are amenable for training?
- in which aspects is the training likely to have good impact under the conditions given?

result ⟶ *priority areas for training*

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SOME ASSESSMENT TECHNIQUES

- meetings with senior officers
- analysis of policy and programme documents
- field visits
- structured observation of job performers who are seen as exemplary "role-model"
- brainstorming with individuals who are "in the best position to know best"
- analysis of critical incidents
- appraisal reports
- group meetings to discuss job-related problems
- analysis of critical incidents (gathered from reports/records and/or from persons)
- client group interviews
- appraisal by supervisor
- observation of potential trainees / tests
- "role set" assessment (boss, clients and colleagues together)
- written self assessment
- individual and group discussion with potential participants
- diagnosis of the causes of the performance problems with the "role set"; problem trees
- review of impacts of earlier training experiences in this field.

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PRE-PLANNING DATA COLLECTION

summary sheet

What kind of data should be collected?	**Why** do we collect these data?	**How** can we collect these data?

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PRE-PLANNING DATA COLLECTION

When preparing a new training programme we need to gather various types of data in order to be able:

- to formulate relevant and realistic learning objectives;
- to select appropriate training methods and to develop effective curricula;
- to arrive at appropriate arrangements for training (timing, duration, food, place, setting, group composition, etc.);
- to assess the need for organizational change and required support and follow-up after the training.

Next to the assessment of the *learning needs* (see paper: "Assessment of Learning Needs" the training organizer will need information on e.g.:

- **relevant characteristics of the target group:** how many are there? Of what age, sex, educational background, working experience? Will it be individuals or teams? What kind of restrictions/preferences do they have with respect to the selection of the timing and location of the training, food and lodging, working in mixed groups (e.g. sex, age, staff level, educational level)?

- **the resources available for the training programma** (or potentially available): financial resources; training facilities, -materials and equipment; human resources; information; interinstitutional working relations.
  With respect to the human resources: training management capacity, availability of qualified moderators and resource persons, sufficient support staff, participating farmers and staff in fieldwork locations.

- **the working conditions of the future participant:** how do the actual working conditions of the future participants influence the possibilities to apply what will be learned in the course? What other measures are needed to solve the problem? Is the programme or organization willing to take such measures?

- the **needs and possibilities for adequate follow up and support:** What opportunities do exist for continued learning after training?
  What kind of support and advice the ex-trainees will need, and will the programme or organization be able to supply such support? Who else might/should get involved?

- what **possibilities/restrictions for monitoring and evaluation** of the outcomes and impacts of the training do exist in the programme or organization; Can it be implemented by the line staff or do training specialists have to be involved?

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IDENTIFYING LEARNING NEEDS AND TRAINING OBJECTIVES

Training is about:

training of a ***PERSON*** on a ***JOB*** in an ***ORGANIZATION***

Then, there is a *job actually performed* vs. *a job to be performed.*
Both must be described (defined) in terms of tasks:
Tasks which are actually being done, and tasks which should be done in order to improve present job performance.

According to the gap between the Knowledge, Skills and Attitudes shown actually and the Knowledge, Skills and Attitudes required learning needs can be established. If the gap observed between the job performed actually and the job to be done is due to the $K_1S_1A_1$ and $K_2S_2A_2$ linked to the tasks to be performed, then learning objectives can be defined.

How?

step 1 assess what is *important* for the *job* and the *individual(s)* concerned;
step 2 which differences are due to aspects Knowledge, Skills and/or Attitude? i.e.: is deficient performance due to *trainable* aspects?
step 3 develop a *strategy* how to cater for these deficiencies, select appropriate training *methods;* arrange training *conditions* properly
step 4 identify *required support* and *follow-up* measures to be taken.

Learning needs can be defined properly, if

- the type of persons by whom the job has to be done is clearly indicated
- the type of problems the training refers to is described,
- the performance elements of the particular job can be distinguished, *and*
- the aims the job is meant for can be identified.

Take, for instance, a driver's job:

- to operate,
- to maintain,
- to register the kms driven,
- register oil/fuel consumption,
- take care of the battery/ electric system,
- handle and repair most frequent breakdowns,
- bring in the vehicle into the mechanical workshop periodically, at pre-set times,
- keep the logbook up to date,
- to dispatch administrative formalities,
- to respect the traffic code,
- to handle the vehicle properly (do not overload),
- to keep the vehicle neat and tidy,
- not to give unauthorized rides,
- not go into private transporting services.

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TRAINING NEEDS INDICATED AS SUCH AND "TRAINABILITY"

An example:

> In a certain case FEW were to be trained on behalf of poor job performance. But,analysis in detail on the spot revealed a chronic transport problem, which gave rise to the poor task fulfilment by extension personnel.

In this particular case, solutions were likely to be found in changing procurement procedures, allocation of more financial resources or delegation of decision making authority on budget expenditure, either re-organization of the workshop management, or maybe even re-training of
the mechanics and support personnel of the garage. however, there were no incentives, no rewards and no check-up procedures.

Now, would you conclude, either as a manager or a trainer, that a training for FEW is the most appropriate measure to be taken in order to improve the extension service performance??

What can you, as a trainer, do to this?

First: *Analyze, why there is a gap*

Organizational factors		Individual factors	
• procedures	• management style	• competence	• skills gap
• incentives	• funds	• ignorance	• attitude
• resources	• planning	• knowledge gap	• motivation

Examples from participants' situation were given: technology innovation that was too expensive (milk quality testers; India), too expensive sprayers although message was understood (coffee berry disease; Tanzania).

What can trainers do to make training more effective?

How can trainers proceed, once they perceive that training is not the solution to the problem at hand?

- . Is problem identification - problem analysis & problem solving a part of your job and responsability as a trainer?
- Where does a trainer's responsability end? Where does the trainer stop? Answer: if the problem at hand is not a training problem, then the trainer stops!

Remarks: - Yes, but ...

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PROPOSED FRAMEWORK FOR TRAINING NEEDS ASSESSMENT IN SUSTAINABLE AGRICULTURE TRAINING*

KINDS OF INFORMATION FOR TNA	INDICATORS	METHODS OF GETTING INFORMATION	FROM WHOM TO OBTAIN INFORMATION	OUTCOMES
Context Biophysical	• Vegetation cover • Climate • Rainfall • Soil condition	• Observation • Tools (checklist) • Requests • Pictures • PRA • News bulletin • Government records	• People in communities • Documents • Requesting officer • Local govern-ment officials	• Situational analysis
Sociocultural	• Food preference • Religious belief • Social relationship • Social attitudes			
Economic	• Landholding/ access • Assets • Livelihood • Housing			
Political	• Government policies • support (or lack of) from local government			
Organization •Climate	• Staff turnover • Performance evaluation results • Staff development activities	• Program documents • Vision/Mission/ Goals • Plans • Evaluation and other reports	• Supervisors • Decision-makers • Staff at different levels who have a stake SAT • Donors	• Analysis of organization policies, system and procedures as enhancing or limiting factors
Individual •Knowledge	• Concepts, principles, issues, trends	• CV's • Academic background • Dialogue • Experiecnes		

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KINDS OF INFORMATION FOR TNA	INDICATORS	METHODS OF GETTING INFORMATION	FROM WHOM TO OBTAIN INFORMATION	OUTCOMES
• Skills	• Utilization of resources • Application of technology		• Target audience	• Task analysis
• Attitude	• Action have influence within and outside farm boundary • Concern for wholistic development • Positive behavior on common property resources	• KSA inventory	• Peers • Supervisor • Partner in communities	• Assessment of individual capability to K perform tasks S related to SA A - training - technology gaps implementation - advocacy - program management

N.B.

- Process has to consider participation of stakeholder at all levels. Expressed needs by people in communities, decision makers/managers and the individuals to undergo the training has to be noted.

* Prepared by Kamal B., Badri D, and Marise E.

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KNOWLEDGE/SKILLS INVENTORY FOR REGENERATIVE/ SUSTAINABLE AGRICULTURE*

TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
1.1 Issues/Trends affecting Sustainable Production Systems											
a. Impact of agrochemicals in agricultural (ecological, social, economic, political) environment											
b. Biotechnology. Its positive and negative impacts in agriculture											
c. Intellectual Property Rights (IPR) vs Farmers Rights (F)											
d. Issues (land tenure, debt, population grow rate, NIC thrusts affecting agriculture											
Other Topics You Want to Include: _____											
1.2 Concepts/Principals Underlying Sustainable Agriculture											
a. Agriculture in Historical Context											
b. Scientific Basis of Sustainable Agriculture											
o Biodiversity - genetic resources management & conservation											
o Biological Resources for Sustainable Agriculture											
o Biophysical aspects of agroccosystems											
- climatic classification											
- type of rainfall											
- light, relative humidity											
- soils, vegetation, pests as affected by climate											
- effects of climate on crops and livestock production											
Other Topics You Want to Include: _____											

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* List prepared by Inter-Institutional Organizing Committee for (UPLB, IIRR, SIBAT, AGTALON, HELVETAS) the Helvetas training in Sustainable Agric. for its partner organizations

TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
1.3 <u>Ecological Agriculture Principles and Practices</u> a. Soil Quantity/Soil Health - Determinants of soil properties - Concept of soil quality - Factors affecting the quality of the soil - Methods/approaches in improving, restoring soil quality - Soil and water conservation strategies											
Other Topics You Want to Include: _____											
b. Alternative Pest Management - Factors affecting the occurrence of pests - Ecological/Non-chemical approaches to pest management - Issues on pest management o Chemical control o Botanical control o Biological control o IPM (Integrated Pest Management) o SIAT (Systematized Insecticide Application Technique)											
c. Cultivar Improvement and Management in Ecological Agriculture - Terms commonly used but loosely understood (variety, line, hybrid, genetic uniformity, genetic erosion, plant breeding, etc.) - Methods of plant breeding (Self, cross pollinated crops) - Participatory/Farmer-based plant breeding methods - Cultivar utilization guides in Ecological Agriculture											

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TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
d. Seeds and Seed Handling for Ecological Agriculture - Importance of Seeds - Seed type/characteristics - Seed quality parameters - Seed testing & evaluation - Seed storage - Seed production and distribution - Seed related issues (seed act, patents, hybrid seed production, etc.)											
1.4 Various Models or Approaches to Ecological Agriculture a. Biodynamic Farming (Steiner Historical background, philosophy, farming principles and practices b. Natural Farming (Fukuoka) Philosophy, hot it was evolved, do-nothing principles & practices, applicability/adaptability under Philippine environment c. Permaculture (Molison) Philosophy, principles and practices, salient features applicable in the Philippines d. Regenerative Agriculture (Rodale) Philosophy, principles and practices, salient features applicable in the Philippines e. Other approaches o LEISA (Low External Input Sustainable Agriculture, REAP (Resource Efficiency Agricultural Production), etc.											
1.5 Issues/concerns in the Adoption of some Technologies/Techniques a. Use of compost (on-farm vs off-farm compost making) b. Use of rapid composting vs natural composting methods c. Use of Botanical Pesticide d. Indigenous knowledge/folklore based technologies											

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TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
1.6 <u>Planning/designing farming system along the parameters of sustainability</u> a. Issues/requirements for conversion (Vertical vs horizontal approach to conversion) b. Area-based planning whole farm, community or agro-ecological zone)											

2. Below are special topics or disciplines in Agriculture. Also, encircle the approapriate level from low (1) to high (10).

TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
2.1 Production and management of Agronomic & Horticultural Crops a. Crops & their environment b. Morpho-physio-biochemical basis of crop yield c. Nutrition & crop growth, development & yield d. Cultural requirements o Cereals o Root crops o Legumes o Fiber crops o Vegetables o Fruit trees o Plantation crops o Forage/pasture o Cut flowers											
Other Topics You Want to Include:_____											

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TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
2.2 Special topics/laboratory/field practicum											
a. Plant propagation											
o A sexual (grafting, marcotting, budding, layering)											
o Micropropagation											
b. Pest Identification											
c. Pest Epidemilogy (environmental factors affecting pest spread, population build-up & survival)											
d. Site Evaluation for crop production (soil, climate, location)											
e. Crop Improvement/Techniques (Emasculation and Pollination)											
Other Topics You Want to Include: _____											
2.3 Animal Production											
a. Species/animal breed selection (hybrid, native, upgrade)											
b. Animal Breeding											
c. Animal Physiology, Growth and Reproduction as affected by climate, nutrition and management											
d. Nutrition and feed formulation											
e. Animal Health, Disease Prevention, Protection and Cure											
f. Production Technologies											
o Swine											
o Poultry (Broiler and layer)											
o Duck (Mullard, Muscovy)											
o Beef cattle											
o Dairy											
o Carabao											
o Goat											
Other Topics You Want to Include: _____											

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3. Below are some topics, tools, approaches relevant to development works. Aslo encircle the appropriate level from low (1) to high (10).

TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
3.1 Farm System/Community Development											
a. Rapid Appraisal Methods											
- Rapid Site Appraisal (RSA)											
- Sondeo											
- Rapid Rural Appraisal (RRA)											
- Participatory Rapid Appraisal (PRA)											
b. Understanding Farming as a system											
c. Problem/Constraint Analysis in farming system											
d. Analysis of Solutions, Intervention or measures identified to solve the problem											
- impact assessment, technical, social, economic, political and cultural											
e. Preparation of site-specific farm plans											
f. Preparation of area-based plans											
g. Preparation of farm budgets, and feasibility study											
h. Preparation of site-specific guidelines/ policies											

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TOPICS	LOW						HIGH				
	1	2	3	4	5		6	7	8	9	10
3.2 Special Topics											
a. Gender Related Issues in Sustainable Agriculture											
b. Participatory Research/Extension Methods											
c. Specific methods											
o Center-based vs on-farm R/E methods, Farmer-to-Farmer exchange visits, group visit											
d. Designing and implementing credit for SA											
e. Alternative marketing strategy for SA											
f. Communication (principles, practices)											
g. Community organizing (present status, problem, options)											
h. Participatory management											
i. Policy formulation/advocacy											

Other Topics You Want to Include: _____

_____

_____

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KNOWLEDGE, ATTITUDE AND SKILLS INVENTORY FOR SUSTAINABLE AGRICULTURE TEACHERS[1]

Instructions :

1. Please rate the extent by which the following topics are important to you as teachers of sustainable agriculture in secondary school in Laos. Do this by checking the appropriate collumns on the left side of the list.

2. Do not forget to assess the extent by which you need to learn these topics by checking the appropriate collumns on the right side of the list.

3. Should there be skills, knowledge, attitude that you feel are important but are not listed please add them to the list. Follow steps 1 and 2 in rating them.

4. We encourage you to use this questionnaire when appropriate and give us feedback on your experience in using it. Do not forget to give the authors the credit.

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[1]Developed by Marissa B. Espineli, Acting Director, Education and Training Division, International Institute of Rural Reconstruction for the consultancy services rendered to CIDSE Lao for the Promotion of Sustainable Agriculture in the secondary agricultural schools Project, March, 1997; with support from Binh Pichammanh, Program Officer of CIDSE Laos and Khammalounla of Sustainable Agriculture Forum, Laos.

Degree of Importance			Sustainable Agriculture Topic Listings	Degree of Need		
Very Important	Important	Least Important		Not Needed	Some Need	Strong Need
			1. Sustainable Agriculture Philosophy and Principles 1.1 attributes, dimensions and concepts of sustainable agriculture 1.2 key approaches towards shifting to sustainable agriculture 1.3 current development issues and trends affecting agricultural production 1.4 cause and effect analysis of agricultural and environment relations 1.5 understanding principles of the ecosystem 2. Farm Analysis 2.11 Understanding farming household 2.12 Farm Integration Concepts 2.13 Farm Planning/ Land-Use Design 2.14 Gender Analysis in Agriculture Production 3. Sustainable Agriculture Technologies 3.1 Soil Management 3.11 Soil Fertility Problems: Causes and Consequences			

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- Importance ?
- Wouldn't the questionaire encourage filling without much thought.?

Degree Of importance			Sustainable Agriculture KSA Listing	Degree of Need		
Very	Impt	Least		Not Needed	Some Need	Strong Need
			3.12 Soil classification			
			3.13 Soil fertilization by green manuring			
			3.14 Soil fertilization by composting			
			3.15 Soil fertilization by liquid fertilizer			
			3.16 Mulching			
			3.17 Cover cropping			
			3.18 The Economics of Using Organic Matter			
			3. 2 Cropping system			
			3.21 Multiple cropping			
			3.22 Intercropping			
			3.23 Relay cropping			
			3.24 Mixed cropping			
			3.25 Multi-storey cropping			
			3.26 Crop Rotation			
			3.3 Organic Fertilizer Production			
			3.4 Plantation			
			3.41 Agro-forestry			
			3.42 Boundary plantation			

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			4. Pest and Disease Management 4.1 Common Plant Disease and Pest Problems 4.2 Concepts and Principles of ecological pest and disease management 4.3 Common Methods of ecological pes and disease management 4.31 Management of pest carreied by insects 4.32 Management of pest carried by other means 4.4 Setting up and maintaining a herbarium 4.5 Treatment to control diseases 4.6 Pesticide safety and management 4.7 Preparing botanical pesticide Seeds 4.8 Seed production problems: in country situation on seed production 4.9 Identification and selection of seeds 4.10 Seed production cycle 4.11 Seed preservation and storage Water			

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			Water			
			4.12 Water management problems, causes and solutions			
			4.13 Sustainable water management : theory and concepts			
			4.14 Water conservation and use			
			4.15 Water logging and drainage management			
			4.16 Irrigation systems			
			5. Learning with the farmers — No 6.			
			5.1 Giving importance to indigenous knowledge			
			5.2 Participatory learning methods			
			5.3 Gender analysis in agriculture production			
			5.4 Participatory Technology development			
			5.5 Extension approaches			
			6. Livestock production — No 5.			
			6.1 Pigraising			
			6.2 Poultry raising			
			6.3 Duck raising			
			6.4 Cattle raising			
			6.41 Cattle fattening			
			6.42 Cow-calf production			

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			6.5 Raising other fowls 6.6 Diagnosing animal disease 6.7 Controlling disease 6.71 Immunization 6.71 Using herbal plants to control animal disease 7. Teaching sustainable agriculture 7.1 The teacher as extension worker 7.2 Participatory training concepts and principles 7.3 Session planning 7.4 Selecting and use appropriate training methods 7.5 Communication skills 7.6 Formulating learning objectives 7.7 Preparing tests 7.8 Facilitation skills 7.9 Presentation skills 7.10 Strategies for self-development as teachers			

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QUESTIONNAIRE FOR TRAINING NEEDS ASSESMENT (TNA)*

I. PERSONAL DATA

Full Name: _____ Sex: _____ Age: _____
Educational Attainment: _____

II. EMPLOYMENT

Name of Organization presently working with: _____
Current Position: _____ Since when? _____
Please describe briefly your function/responsibilities:
_____
_____

III. WORK EXPERIENCE

Number of years in Development Work : _____
Number of years training experience : _____
Number of training courses conducted/organized (please check)

- Less than 20 courses _____
- 21 - 40 courses _____
- More than 40 course _____

What trainor roles have you assumed in the conduct/organization of the above courses? Please check one or more.

_____ 1. facilitate
_____ 2. resource person
_____ 3. documentor
_____ 4. evaluator
_____ 5. coordinator
_____ 6. in-charge of organizing the course
_____ 7. course developer/designer
_____ 8. others: _____
_____

Please list the topics which you have handled in the said courses:

_____ _____
_____ _____
_____ _____

IV. TRAINING COURSES ATTENDED RELATED TO TRAINING OF TRAINORS (TOT)

Title of Course	Dates
_____	_____
_____	_____
_____	_____

*Prepared by Espineli, Marissa and Pineda May, Training Division, IIRR for the NGO Resource Center (Vietnam) Training of Trainers, July 1995

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Instruction: Please read through the list of training activities listed and check the column which describes the degree of importance of the activities in your current functions and the extent you are able to perform them.

Not Important	Important	Very Important		No Competence	Needs Enhancement	Highly Competent
			A. ASSESSMENT OF TRAINING NEEDS			
____	____	____	1. Analyzing reports, records, test, examinations, surveys, etc.	____	____	____
____	____	____	2. Task analysis	____	____	____
____	____	____	3. Assessment of organization and its need	____	____	____
			4. Reporting TNA results			
____	____	____	5. Others:	____	____	____
____	____	____	_____	____	____	____
			_____			
			_____			
			_____			
			B. DESIGNING TRAINING COURSES			
____	____	____	1. Defining objectives to be attained by trainees (specific set of measurable knowledge, skills, orientations, experiences that may be attained at the end of the course	____	____	____
			2. Identifying and sequencing of topics			
____	____	____	3. Preparing the training schedule	____	____	____
____	____	____	4. Planning for course evaluation	____	____	____
____	____	____	5. Selecting training methods	____	____	____
____	____	____	6. Packaging training materials	____	____	____
____	____	____	7. Identifying resources for course implementation	____	____	____
____	____	____	8. Others:	____	____	____
			_____			
			_____			
			_____			
			_____			
			C. MATERIALS DEVELOPMENT			
____	____	____	1. Preparing case studies, readings, exercises and other print materials	____	____	____
____	____	____	2. Designing of games or Structured Learning Exercises (SLE)	____	____	____
____	____	____	3. Preparing audio and video materials	____	____	____
			4. Testing and validation of materials			
____	____	____	5. Others:	____	____	____
____	____	____	_____	____	____	____
			_____			
			_____			
			_____			

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Not Important	Important	Very Important		No Competence	Needs Enhancement	Highly Competent
			D. COURSE IMPLEMENTATION			
____	____	____	1. Conducting sessions 1.1 Process 1.2 Techniques	____	____	____
____	____	____	2. Using training methods 2.1 Lecture 2.2 Discussion 2.3 Workshops 2.4 SLE 2.5 Case studies	____	____	____
____	____	____	3. Communicating ideas 3.1 Questioning 3.2 Listening 3.3 Feedbacking	____	____	____
____	____	____	4. Handling group conflict	____	____	____
____	____	____	5. Conducting evaluation	____	____	____
____	____	____	6. Documenting the course	____	____	____
____	____	____	7. Managing day to day activities e.g., logistics, coordination, etc			
____	____	____	8. Others: _____ _____ _____	____	____	____
			E. EVALUATION			
____	____	____	1. Preparing evaluation instruments	____	____	____
____	____	____	2. Analyzing data	____	____	____
____	____	____	3. Preparing the course report	____	____	____
____	____	____	4. Communicating evaluation results	____	____	____
____	____	____	5. Others: _____ _____ _____	____	____	____

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FORMULATION OF LEARNING OBJECTIVES

Learning objectives: What are these?
Why should learning objectives be defined?
Why not?
Levels?
Which domains?

Generally, we can distinguish between three major areas of learning, called domains:

- the learning of knowledgeable facts,
- the learning of (motoric or analyzing, problem-solving) skills
- learning concerning attitudes (which concerns orientation, commitment and motivation).

Learning objectives can be multiple ones, in various domains, e.g.:

- Staff development
- Organizational procedures
- Use of irrigation water
- Use of a plough
- Policy changes
- Bookkeeping principles
- Motor maintenance
- Programming skills, etc.

How to formulate a performance objective?

- use active verbs
- specify what has to be performed
- indicate a standard
- specify conditions

Next, we have to question ourselves on at least two more characteristics of the learning objectives thus identified:

applicability (are there resources available?)

and

appropriateness (taken into account the group of trainees)

Learning methods can be classified in order of appropriateness for discriminate learning objectives. So, a lecture may serve well for information transfer and presentation of factual knowledge, while this method may do not so well in development of skills or influencing attitude.

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Apart from characterizing learning methods according to the domains of Knowledge, Skills or Attitude, these methods may be scored against the potential of information transfer, interest raising value, information transformation or stimulation to active participant involvement.

Try to classify the learning methods mentioned below:

- lecture
- demonstration
- seminar
- field training
- case study
- practical instruction
- role play
- simulation games
- structures exercise
- programmes self-instruction

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SELECTION AND FORMULATION OF LEARNING OBJECTIVES

Why objectives?

"If you do not know where you want to go, you easily end up where you do not want to be" (R.F. Mager)

The formulation of objectives:

- facilitates the *planning* of the training activity, by making it easier to select relevant learning experiences and contents systematically;
- makes the training more effective and efficient by orienting the *implementation:* the trainer concentrates more on what is really needed and is prevented to stray off, and participant learning is stimulated by clarifying for each part of the training what they are going to learn and how they can assess progress made (what they should be able to do if they attained the objective);
- provides a sound basis for *evaluation* of the training;
- improve the impact of the training by concentrating attention on the resulting *change in behaviour* and *action* in the field rather than increase in knowledge and skills as such.

What are objectives?

We may distinguish between the *educational aims* or general objectives of a training, globally indicating the purpose and desired outcomes of that training (eg. "to develop an understanding of the principles of selection and formulation of objectives" and *learning or performance objectives,* which specify in observable terms what the participants should be able to *do* at the end of the training (eg. **a** to explain the difference between aims and objectives, **b** to formulate objectives using the three components of performance objectives correctly, **c** to demonstrate to colleaques in a convincing way the advantages of writing performance objectives).
Specifying detailed learning objectives is a strong instrument in making learning more effective.

However, one should be aware of the *dangers:*

- overconcentration on specified objectives may make learning so prescribed that spontaneity, initiative and creativity withers;
- a tendency to "loose" those objectives that are less easily to specify and measure in behavioral terms eg sensitivity, problem solving skills, creativity, change in attitude or values, etc. Especially the affective domain and non-motoric skills (see 'domains' hereunder) tend to get less attention. Such objectives tend to be the more important ones! Writing detailed performance objectives can be a very time consuming and difficult task. This may result in formulating only the most trivial and easy to write objectives, leading to low grade objectives (see 'levels' hereunder) dominating a training at the expense of potentially more valuable objectives.

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Domains

Learning objectives can refer to the following domains:
- the **cognitive** domain: knowledge, understanding, analysis; facts and images about situations and the capacity to analyze these situations;
- the **affective** domain: awareness, attitudes, aspirations, orientations, feelings, emotions; meaning attached to certain situations;
- the **psycho-motoric** domain: behaviour, performance, acting; the observable (re-)actions to (in) certain situations.

Development of a certain "ability" normally includes all three domains.

Levels of "knowing" something

Learning objectives can be formulated at different levels:
- to know: being able to reproduce some memorized facts and bits of theory
- to comprehend: being able to explain a theory or fact in your own words giving examples, classifying objects into categories, extrapolating, etc;
- to apply: being able to apply a bit of theoretical knowledge in practice, to perform a standard task under known conditions;
- to practice independently: being able to decide when to use this knowledge and to apply it on own initiative under varying conditions;
- to develop: being able to be able to see new relations and to combine elements into a new guideline, approach, theory

Writing performance objectives

Trainers are tempted to formulate objectives in terms of what they themselves are going to do in the training eg "teaching the trainees how to define objectives". You might call this "teaching objectives". This type of objectives do not tell much about what the *participant* will be able to do at the end of the training.
Hence, it will be better when the objective describes the desired performance of the *participant*.

Objectives should describe *observable* behaviour. Trainers are often using words like "understand" or "know" "be aware" when defining objectives. Such words may indicate perfectly what we expect the student to learn but we cannot observe what happens inside the head.
To assess whether the student "understands" or "knows", we need verbs that describe some *observable activity*. The description "the trainee knows how the content of a cube must be calculated" is less clear than "the trainee will be able to calculate the contents of a cube".

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The *standard form* of a performance objective consists of three components or characteristics:

a the performance:
what the trainee is expected to do upon completion of the training. The performance consists of a verb that denotes the behaviour to be demonstrated (e.g."type") and the result of that action that will be assessed (eg "a document of x words");

b the conditions:
under what conditions the participant is expected to demonstrate the performance (eg "given an electric typewriter);

c the standards:
describes how well the participant is expected to perform: how often, how fast, how many (eg "within y minutes and with no more than z mistakes").

The complete example reads now: "Given an electric typewriter, the participant should be able to type a document of x words within y minutes with less than z mistakes".

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Sample List of Action Verbs by Categories of Learning Outcome

Knowledge Acquisition and Utilization	*Skill Building*	*Attitude Change*
To identify	To demonstrate	To challenge
To list	To produce	To defend
To compare and contrast	To calculate	To judge
To describe	To adjust	To question
To state	To install	To accept
To differentiate	To assemble	To adopt
To prepare	To operate	To advocate
To recall	To detect	To bargain
To classify	To locate	To cooperate
To categorize	To isolate	To endorse
To chart	To arrange	To justify
To rank	To build	To persuade
To distinguish	To conduct	To resolve
To explain	To detect	To select
To outline	To execute	To dispute
To analyze	To fix	
To evaluate	To lay out	
To formulate	To perform	
To investigate	To sort	
To modify		
To report		

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DESIGNING TRAINING CURRICULA

INTRODUCTION

A curriculum is a guideline for training activity which outlines objectives, content, and other details related to the plan for training for a particular group on a particular content area. The approach to curriculum design is, on a macro-level, what lesson planning is on a micro-level.

The curriculum should not be seen as being "cast in iron", so that it must be followed no matter what, but should be flexible. It may need to be adjusted during a particular course due to the specific expectations needs and requests of the participants, the general sense of the facilitators of how things are going, availability of additional ideas, resources which were not planned for, etc. It will also often be changed from one course to the next based on evaluation and impact assessment of earlier courses.

TEAM APPROACH TO CURRICULUM DEVELOPMENT

Whenever possible, it is best to involve all of the stakeholders in the development of curricula. These may include training organizers, facilitators, potential trainees, donors, or community members who would eventually benefit from the training. Remember that there is a wide variety of interpretations of reality. Each person sees the world through a personal lens which is a product of many factors such as culture, education, gender, etc. This plurality of perspectives will enrich both the process and the product of curriculum development.

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"PARTICIPATORY" CURRICULUM DEVELOPMENT GIVES THE BEST RESULTS

TRAINING NEEDS ASSESSMENT

The curriculum should be based on assessed needs. Needs can be assessed through formal surve PRA techniques, observation, casual conversations, study of records and written reports, etc. The general principle is that the required knowledge, attitudes, skills and habits, less the present knowledge, attitudes, skills and habits will indicate the needs.

KASH required - KASH present = KASH needed

However, as training is not the only or necessarily the best solution to every problem, careful consideration needs to be made as to whether a particular need is best met through training or through some other intervention (counselling, mentoring, study tour, financial assistance, etc.)

DEFINING THE TARGET GROUP

There are times when, as needs are assessed on a larger group (i.e. a community), it becomes cle that there are different needs among different sub-groups. Perhaps women's training needs are different from those of men, or perhaps community motivators need different training from farme in general. It is important to define the target group as an initial step in the curriculum develope process. Some of the important characteristics to look for are: age, sex, educational background occupation, cultural factors, etc. The curriculum will be designed with these characteristics in m

NAMING THE PROGRAM

The name of a training program should be indicative of the content to be covered, and when appropriate, the level of coverage. It is important to be as specific as possible in order to avoid unrealistic expectations or promising what you cannot or don't plan to deliver.

DETERMINING CONTENT & ORGANIZING IDEAS

Content should always be related to the objectives. (If you want to have the desired impact, avo the temptation of naming topics first and then developing objectives for the course based on pre-determined content areas.) There are various ways of determining and organizing content areas course design, for example:

1. *Thought mapping*
   Begin with one of the major identified areas of need/gaps identified in attitudes, knowled skills (i.e. watershed management, or nutrition, etc.). Using brainstorming methods, let people share what comes to mind when they hear the term. After, the same process will followed for each of those terms given. Eventually, this will lead to a number of potenti topics which are somewhat organized into major content areas. Each potential topic can discussed to determine its merit in relation to reaching objectives. Continue with other m identified areas.

2. *Outlining*
   Begin by listing main areas of content related to determined objectives. Consider whethe they should remain separate or if some can be combined or need to be separated. For ea remaining main area, identify sub areas, and then further details. The main areas can be with as modules with detailed topics under each.

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3. *Tree/branching approach*
Start with the trunk as the main idea (focus of the course). Roots represent the objectives. Le the main branches represent major content areas, and smaller branches topics. Leaves can represent minute details under each topic.

4. *Visualization*
Write main content areas (evolving from needs and objectives) on cards. Place them on a larg board (or wall) and move them around until the group feels they are in a logical sequence. Then add more levels of detail under each. The advantage of this method is that it allows for continued movement of topics until the group is satisfied.

TOPIC DETAILS

Once the topics are determined, details of topic or session objectives should be developed along with plan for methods to be used, materials & visual aids, and precise timing. (These details are often not included in the curriculum, but in the session plans developed by the facilitator.)

LENGTH OF THE TRAINING

Sometimes the length is predetermined according to factors other than training needs, such as time constraints of trainees, financial constraints, or others. At other times, and perhaps ideally, the only factor is how long it will take to meet the identified need. Whichever way, it is important that objectives be appropriate for the timing or vice versa. Timing is also a major consideration in selection of topics. It is better, generally, to cover a few topics effectively than to rush through many

METHODOLOGY

Methods can also be considered as part of the training design. Possible methods are case studies, practicals, field visits, small and plenary group discussions, presentations by facilitators, games and exercises, etc. The possibilities are almost limitless. In training of adults, major considerations in selection of methodologies include:

--appropriateness to the topic
--variety of methods
--participatory nature of the method

MATERIALS/RESOURCE PERSONS

As the course is designed, possible human and other resources can be listed for consideration. Sometimes one can attach a bibliography to the curriculum.) As preparations are made, the list can b expanded as necessary. There are times when the timing of a course might be adjusted depending on availability of the right resource persons, or adequacy of time to develop or locate appropriate materials.

EVALUATION PLANNING

It is a good idea to begin considering and planning for evaluation even at the curriculum development stage. Are objectives "evaluatable"? At which levels will you want to evaluate (reactions, learning, job behaviour, functioning level)? What tools/resources will you need for evaluation during the training? Afterwards?

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EVALUATION OF TRAINING

INTRODUCTION

Evaluation is the process of determining the "value" of something in terms of relevance, efficiency and effectiveness. Evaluation is a very normal and necessary process. In our daily lives, we are continually evaluating ourselves, others, and various activities and situations. Such evaluation assists us in decision-making, selecting alternatives, planning for change, modifying our lifestyles and improving the way we go about our work. Even the Bible informs us that we will "know them by their fruits" and, therefore, advises us to "put them to the test"--in other words, to carefully evaluate.

Are we putting our training programmes "to the test" or are we continuing course after course, year after year, working hard, but not really knowing what we've accomplished? In fact, if training evaluation is done at all, it tends to be limited to a rush-job on the last day when everyone has a lot of other things on their minds.

PURPOSE OF TRAINING EVALUATION

Training evaluation is the systematic collection and assessment of information for deciding how to best utilize training resources in order to achieve organizational goals. Thus, the purpose of the evaluation is to refine present methods and programmes for more economical and effective future performance. In other words, it is essential to know where you are in order to plan for the future. Ideally, evaluation of training should answer each of the following four simple questions:

1. How did it go?
2. Did they learn anything?
3. If so, did they use what they learned?
4. If they used it, did it do any good?

LEVELS OF EVALUATION

The above four questions can be related to four levels of evaluation as follows:

1. The Reactions Level--Trainees react to the training (form opinions about the trainer, the method of presentation, usefulness and interest of the subject matter, their own enjoyment, involvement, etc.) This level is sometimes referred to as the "Happiness index."

2. The Learning Level--Trainees learn (acquire knowledge, skills, and attitudes) about the subject matter of the training. This level is

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sometimes referred to as the level of immediate outcomes.

3. The Job Behaviour Level--Trainees apply this learning in the form of changed behaviour back on the job. This level is sometimes referred to as the level of intermediate outcomes.

4. The Functioning Level--This changed behaviour affects the functioning of the firm or organization (or the behaviour of individuals other than the trainees). This level is sometimes referred to as the level of ultimate or long-term outcomes.

For each of the above levels of evaluation, there are advantages and limitations, and, for each, decisions must be made as to what, when and how information will be collected. In each case, evaluation should be tailor-made to fit the situation.

Evaluation at Reactions Level

This is a short-term, subjective assessment of the trainees' reaction to the course. It gives an indication of the areas of the course which need immediate alterations. However, when used alone, it may not give enough information to indicate whether or not broader course objectives were actually met or what the long-term effects of the training will be.

One can evaluate reactions during the course (for example, through evaluation of various topics or sessions as well as generally), at the end of the course, or some time later, to obtain long-term reactions or impressions. Methodology may include watching and listening for trainees' reactions, group discussions, or various questionnaires and rating scales.

Evaluation at Learning Level

At this level, the evaluation helps to assess or measure the amount of learning (in terms of knowledge, skills and attitudes) acquired during the course. It helps the trainer to establish base data and may also help the trainee to identify his own areas of need. However, it is limited in that it does not indicate whether or not the learning will be applied.

One can evaluate learning during the course, at the end of the course or even sometime later in order to test retention. It may also be necessary to get a basis for comparison by testing knowledge at the beginning of the training. Methodology may include before-after tests, after only tests, observations and discussions, or practical tests.

Evaluation at Job Behaviour Level

At this level, the evaluation measures the effectiveness of the training programmes in terms of on-the-job behaviour. It is quite useful in discovering whether or not former trainees are using new learning acquired during the course. However, this type of evaluation does not measure whether or not this change in job behaviour is having an effect on the organization. Furthermore, it tends to be more difficult and time consuming than "reactions" or "learning" levels.

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One can evaluate change in job behaviour after the trainees return to the job, the amount of delay depending on the nature of the training and the job. The methodology could include use of observation, self-diaries, observer diaries, appraisal by superiors, self appraisal, or questionnaires or interviews designed specifically for the purpose. It is sometimes helpful to ask trainees to develop a plan of action at the end of the course to guide the evaluation of change in job behaviour, particularly where the trainees are a heterogeneous group.

Evaluation at Functioning Level

At this level, the evaluation measures the effects of the trainees' new job behaviour on the productivity or efficiency of their departments/organizations or on the morale of their subordinates. This helps to assess the ultimate impact of the training. It should be done some time after the trainees have been back on the job. Methodology would include collection of data from organizational records, questionnaires, or interviews. However, such evaluation can be time-consuming and it is difficult to know how much of the improvement can be directly attributed to the training programme.

OBJECTIVES

When we start a training programme, we need to have some target to shoot at, some aim in mind to tell us if we have been successful. This aim is the objective. The entire training programme from beginning to end revolves around the objectives, and it is only in terms of these objectives that we will be able to evaluate the training. It is, therefore, necessary that the objectives be well stated in order to facilitate the evaluation. Good training objectives should meet the following criteria:

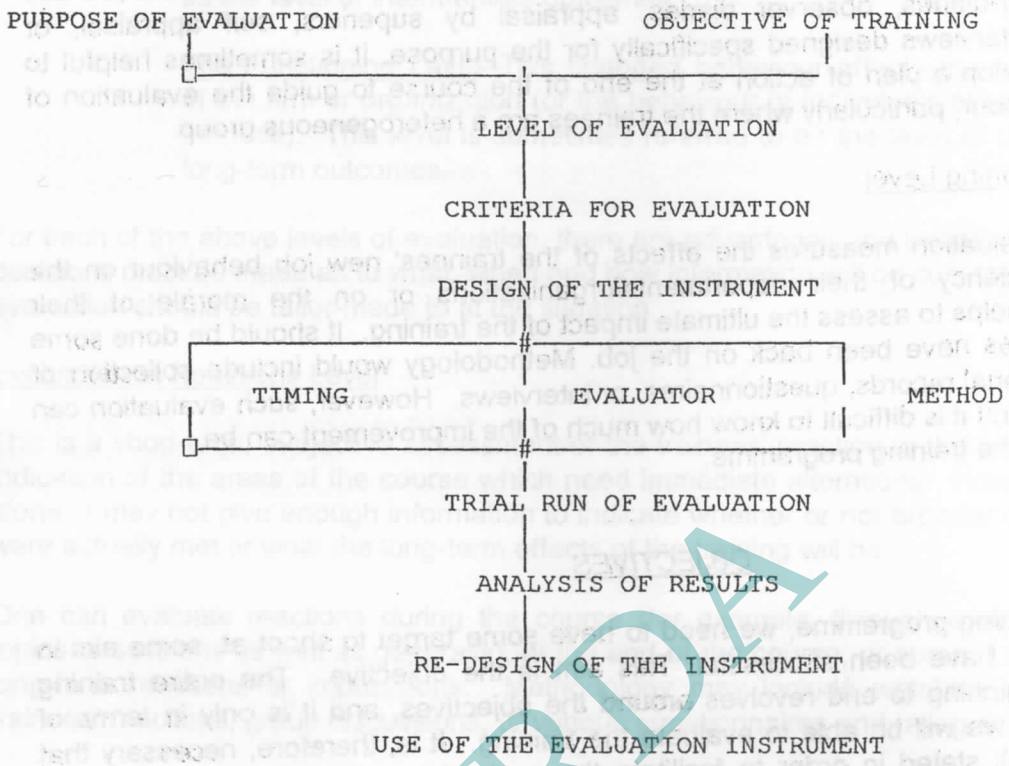
1. They should be clear. Exactly what will the trainee be able to do at the end of the training?
2. They should be realistic--something which is actually achievable in the given time and circumstances.
3. They should be stated in terms of what is to be learned (not taught), in other words, they should be learner-focused, not trainer-focused.
4. They should be specific and measurable or observable if they are to be useful in evaluation.

DEVELOPMENT OF EVALUATION INSTRUMENTS

If evaluation of training is to be done well, the instruments used to evaluate (questionnaire, interview schedule, test) will have to be carefully developed. The following diagram may be useful in evolving such instruments:

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"STAGES IN EVOLVING AN EVALUATION INSTRUMENT"



CONTROL GROUPS

If one is to adopt a scientific approach to the evaluation, there should be a matched control group which did not undergo the training. Whether or not this will really be necessary, will depend on the nature of the training. Sometimes the difference between the trainees before and after the training will be obvious enough to indicate the extent to which objectives have been met. At other times, it may be impractical to use a control group. However, in many cases, use of controls will reduce guesswork and improve validity of the evaluation.

CONCLUSION

Evaluation of training is useful as a tool for assessing the effectiveness of our training in order to make necessary improvements. Additionally, it can actually enhance the trainees' learning by making them more aware of the objectives of the course and more conscious of the results, thus encouraging more interest and effort. It is, therefore, of utmost importance for those involved in training to understand how and when evaluation should be done, and what benefits can be derived from systematic assessment of training and learning. They should also be encouraged to evaluate all training programmes conducted.

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7.4 EVALUATIONS AND REVISIONS

When it is all over for the participants, you as a trainer still have more to do. Don't relax until you have conducted an evaluation of the programme, and worked out where you would change things in the light of new experience. Chapter [ ] sets out in more detail how you can learn from comments made by the participants. Some of these will have been made directly to the trainers or have arisen out of the evaluations exercises

Some comments will seem reasonable and fair, others may appear entirely unfair to you. All are useful, as they give you an indication of changing perceptions of the trainees. Later you may be able to evaluate the success of the programme by observing longer-term changes of attitude or behaviour in the participants as they return to their posts. This will be difficult if you are not situated in their institution, but can be done by corresponding afterwards with participants and senior staff, or making visits. To improve your training skills and make your future sessions more effective, it is important to learn from what went well and what went wrong. Box 7.5 outlines some key points that will help you think about evaluation while you are planning the workshop programme.

Evaluation of the reaction of participants has been described This is a relatively easy part of evaluation. However, this type of immediate assessment is not a good indicator for judging the long-term learning impact. It is more difficult to assess the impact of training in terms of changed behaviour, subsequent on-the-job performance, and organisational change. By assessing changed behaviour of the learning group during the classroom and fieldwork sessions, we can find out not only what they feel, think, or believe as a result of the training, but what they now do differently.

Box 7.5 Key points for evaluating training workshops

1. Evaluation should be done on a daily basis and at end-of-course assessments.
2. Daily evaluations allow trainees to express their feelings and make suggestions for changes.
3. Evaluation of training may be conducted at different levels:
   - the reaction level of participants;
   - classroom level, ie change in behaviour;
   - on-the-job level;
   - organisational level.
4. Participant reactions can tell you how satisfied they are with their training, what they feel they have learned, how the course may be improved, etc.
5. Reactions can be generated through active group methods (Exercises 63–73) and individual exercises.
6. Learning achieved in the classroom can be assessed via observation of behaviour, review of proposed action plans, and before-and-after attitude comparisons.
7. Learning transferred to the job can be assessed by studying implementation of action plans, by presentations by participants at later stages on what they learnt, in post-course discussions with supervisors.
8. Impact of learning on organisational effectiveness may be measured through participatory evaluations by local people, and hard data related to quantitative project objectives.

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Assessing changed behaviour can be accomplished by judging the way trainees fulfil any assignments given in the training setting, from case study analysis, to documentation, to interaction with local women and men. If you ask them to write up action plans . . . , this will tell you about the extent to which they have internalised the training and how committed they are to continuing with what they have learnt. Another way is to assess before-and-after attitudes. For example, if you are conducting a field-based training, then it might be helpful to do a two-phased role play about communication skills. Before the fieldwork, . . . the group can perform a perfect interview . . . After their fieldwork, ask the group to perform this type of interview again and in the debriefing ask them to reflect on the differences with the pre-fieldwork role play. Or you can ask them to revise their team contracts in the light of their fieldwork experiences.

Box 7.6 Conditions for sustained impact of training

- Training must be supported by an explicit mandate supporting participatory development from the top of the organisation, which is communicated to all levels.
- Training is a process and requires sufficient time for effectiveness.
- Someone from inside the organisation must have the responsibility for the training, whether or not an external trainer is coming in.
- After the event, training must be backstopped by strong and qualified staff who are respected within the organisation.
- Training of trainers is a crucial element for achieving long-term integration of participatory approaches.
- Training must be supported by timely and adequate allocation of financial resources.

Sources: adapted from Williams et al, 1993; Lynton and Pareek, 1990

What you assess in terms of changed behaviour only gives an indication of how the new learning may influence working modes. Assessing the impact on actual job performance will need to be carried out by the trainees themselves and their superiors. Monitoring the implementation of the action plans is one relatively easy way to judge this. It might be possible to set a date, within six months of the course, to organise a presentation of the implemented action plans to date. Other ways require supervisors to get more directly involved in the learning experience that their staff have gone through, thus emphasising their responsibility towards the development of trainees. This will require commitment by management to a pre-course discussion about the expected learning benefits. These benefits can then be reviewed to assess whether training goals were realised.

Training is only one of many components that shape and influence the organisational learning process. For it to have a lasting impact, training in participatory approaches must be part of a wider programme of human resource development. Box 7.6 highlights several conditions necessary for training to have a lasting effect. It will not only need to focus on preparing staff to use certain field methods, but also to improve their communication and analytical skills. It will need to encourage a relaxed and open learning environment in which staff from different levels in the institutional hierarchy can work together constructively. Finally, it will have to remain flexible and open to new ideas and new procedures, and adapt to changing conditions within the institution as well as outside it.

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* Source: Participatory Learning and Action, A Trainer's Guide. IIED 1995

EVALUATION PLAN

OBJECTIVE	INDICATORS	METHODOLOGY	WHEN	FROM WHOM
1. To identify areas and scope for improving the workshop	• Design - logical sequencing - appropriateness of content - time allocation - quality of RP's (Resource Persons) - appropriateness of methodology - achievement of objective - training materials	Questionnaire Small group discussion	During the course - End of course evaluation (1) - Mid training focus discussion Daily Before the course	Participants Participants
	• Management - logistics - resources/ materials	Informal Feedbacking Moodmeter/Barometer	Daily reflection	Participants
	• Participants - composition - level - information	Application Forms		Organizers
2. To determine achievement of objectives	• Workshop outputs TPD	Presentation/ Feedbacking	During	Participants
	• Assessment Results	Forms/Feedbacking		
	• Action Plan			

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	OBJECTIVE	INDICATORS	METHODOLOGY	WHEN	FROM WHOM
3.	To determine the extent by which learning from the course was applied in work situation	• evaluation results of training conducted by participants • workshop output of participant trainees • Action Plan • Supervisors support	• Feedback • Questionnaire • Documents/ Reports • Observation visits	After participants have conducted two courses or after a year Before/after the course	Supervisors Peers His/her trainees Supervisors

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For content,a Facilitator....

before Training...

- prepares the training design
- prepares for the training materials, equipment and handouts needed
- coordinates with other members of the team
- prepares monitoring & evaluation forms

during trainings...

- reviews the previous session
- explain the tasks, steps and time allowed in the learning activity
- provides more theory as necessary
- answers or clarifies questions as required
- guides the discusion and keeps it focused on the issue being discussed

Why Use Facilitation in Training

- it encourages maximum participation from both participants & facilitator

- it allows the participants time and space for critical thinking and group decision making

- it provides opportunities for participants to show and develop their creativity

- it builds up the trust , respect & confidence of participants in themselves...

- it empasizes team efforts

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At the end of the session, the participants will be able to:

- define what is a facilitator;
- describe the characteristics of a good training facilitator; and
- discuss the do's and dont's in facilitation

A facilitator is one who....

- trusts other people and their abilities
- respects other people's ideas & experiences
- is willing to listen and has good listening skills
- has confidence in herself/himself and is humble
- is interested in people and their development, friendly, sensitive...
- is flexible, dynamic and creative
- is open to feedback
- is alive, active, and has a good sense of humor
- gets things done & is organized
- works well with a team
- speaks clearly and uses simple words

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FACTORS AFFECTING FACILITATION

- Time
- Issues
- Structure (how much control and direction a facilitator maintain over the participants
- Interpersonal relations
- Knowledge of adult learning principles, group and individual behavior

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FACILITATION TECHNIQUES

A. Components

3. Summarizing sessions

- simple summary
- analogy
- clarifying relationships
- comparison
- introducing new topic

4. Validating new information/learning

- knowing KSA
- asking for clarification/modification

FACILITATING is....

- making things easy and smooth
- giving guidance to participants
- encouraging participants to share...
- creating an environment where participants can learn quickly
- helping the group stay in focus
- helping each other receive and give feedback
- assisting in solving problems or conflict situations
- sharing new ideas...

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FACILITATION TECHNIQUES

A. Components

1. Drawing out/evoking

- asking questions
- giving meaning to what they do
- maintaining attention (positioning, eye contact, walking, voice variation
- maintaining good rapport/relation (humor, re-phrase/re-word, chane)
- clarify conflict
- observe time/schedule

2. Classifying information

- good listening
- understanding well
- arrange according to order

WHAT IS A GOOD TRAINOR?



A TRAINOR MUST BE ORGANIZED.



A TRAINOR MUST BE ALWAYS READY WITH ANY SITUATION. THESE ARE OCCASIONS FOR LEARNING.



A TRAINOR MUST BE IN CONTROL OF THE PARTICIPANTS AND THE SITUATIONS.



HE MUST BE OPEN, ALWAYS READY TO LISTEN TO WHAT COMES FROM THE PEOPLE HE'S TRAINING.

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HE MUST ALWAYS BE IN CONSTANT DIALOGUE WITH OTHER GROUPS AND INDIVIDUALS WHO ARE ALSO INVOLVED IN RURAL DEVELOPMENT.



HE MUST BE WELL-VERSED WITH THE DIFFERENT FORMS OF THEATER, AND HAS A DEEP UNDERSTANDING OF WHAT IS CULTURE.



HE MUST BE ARMED WITH THE NECESSARY TACTICS AND TECHNIQUES IN HANDLING GROUPS.



HE MUST BE ADVANCED IN TERMS OF HIS LEVEL OF CONSCIOUSNESS AND CONSCIENTIZED TO THE SITUATION, THUS THE NEED FOR CONTINUING STUDY.

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AVOID

- offering apologies or excuses for being a poor speaker/resource person
- irrelevant material
- unplanned or unnecessary repetition
- making regular predictable movements
- leaning on chairs
- jingling coins
- playing with keys

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Considerations in Selecting Training Methods:

A. Consider Learning Principles

Principles of learning must govern all decisions:

1. Learning is individual. It is different for each person.
2. Motivation is essential to learning.
3. Learning activities must be relevant to the trainees' experience.
4. Feedback is essential for trainer's success. They require immediate and frequent information on how well they are doing.

B. Specify Objectives

Performance objectives have to be reviewed. Cognitive, affective and psychomotor objectives should be clearly defined in terms of desired learner outcomes. The desired trainee knowledge, skills and attitudes must influence choice of methods.

C. Describe the Training Situation

The training situation is comprised of the trainees, trainers and constraints.

Before training methods can be selected, trainees must be carefully and clearly defined according to:

- individual and group motivations
- prior knowledge, skills and attitudes
- age
- similarities and differences
- numbers

The characteristics of trainers must also be considered before selecting training methods. Describe them by:

- teaching qualifications
- technical know-how and skill
- attitudes towards trainees and training
- individual initiative
- numbers

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Finally, several other factors must be considered such as:

- the budget available for supporting methods
- availability of material resources (can they be reallocated from one program to another? rented or purchased?)
- amount of time available for training

Some methods require a lot of more time to use than others.

Attached is a checklist for selecting methods.

Checklist for Determining the Value of a Method as a Learning Tool

Does the method.....

- engage learners in meaningful operations?
- provide for feedback?
- relate to learner experience?
- provide for motivation?
- provide for individual evaluation?
- respect learning hierarchies?
- encourage structuring of data?
- trigger broader applications?
- allow for individual differences?
- encourage learner initiative and autonomy?
- check for mastery of pre-requisites?
- provide for repetition and exercises?
- provide for a variety of activities?

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mmonly Used Training Methods:

Training Methods	Description	Advantages	Limitations
Workshop	The group is divided into several sub-groups to accomplish a certain task. A moderator and secretary are chosen per sub-group from among the participants to systematize discussions.	Participants are given the opportunity to contribute their ideas. At the same time, it provides a way of teaching them how to handle group discussions.	It is time-consuming especially if the moderator cannot effectively handle the group.
Lecture-Discussion	Discussion between the participants and resource person is interspersed in the lecture session. This is usually done through leading questions.	Trainees participate in the discussion. Boredom can be minimized, unlike in straight lectures where trainees sit and listen.	It is also time-consuming. Varied ideas may be brought up which are irrelevant to the main topic.
Lecture-synthesis	Discussion is based on the results of a proceeding workshop. At the same time that previously presented ideas are summarized, the session is used to relate theories and topics to one another.	The trainees' experiences are incorporated into the lecture to make it more relevant to their perceived needs and individual perspectives.	Workshop results are not always suited to the objectives and expected content of the session.

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Training Methods	Description	Advantages	Limitations
4. Case Studies	Actual/hypothetical community conditions are presented in written or oral form. This then become the springboard for further study.	Group members develop problem-solving ability. It gives them opportunity to test own ideas in a simulated community condition.	It requires intensive preparation prior to training. Suitable case materials are not always available.
5. Simulation	Based on a case study, participants are asked to assume certain roles and act them out.	It strengthens understanding and assimilation of ideas. The situation is discussed and acted out at the same time.	Close supervision and careful study are required. Simulation exercises have to suit target groups.
6. Group dynamics	Structured exercises meant to evoke certain group processes are interspersed in the discussions to stress some points. These are also used for the team-building sessions.	Participants become more involved in the learning situation since it calls for analyzing their own experiences and relating these to certain concepts.	The exercise have to be suited to the course objective and the trainees; characteristics. It should also be pertinent to community situation.
7. Panel Discussion	Speakers from different sectors/group are asked to give their own opinion on certain topics which the trainees can react to afterwards.	Varied views on certain topics are discussed so as to give the participants a wider perspectives on the subject matter.	Speakers have to be properly briefed on the objective and expected content of their session.

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Training Methods	Description	Advantages	Limitations
8. Individual/Group Projects	The trainees are asked to make certain projects related to particular skills either as individuals or as a group (e.g., project proposals, collage, etc). These are later presented for group critiquing.	It allows the trainees to practice certain skills being taught them and to use their creativity.	It requires adequate and clear guidelines and supervision by the staff.
9. Field Visits	The trainees are divided into groups and fielded to different areas to observe communities according to certain guidelines.	The trainees are able to relate concepts/ skills discussed during the training to real life community conditions.	Field arrangements have to be well-coordinated. The observation guidelines should be clear to the trainees.
10. Use of audio-visual teaching aids	Slides, films, posters, songs or other forms of creative literature relevant to the content are presented.	It provides variety to the discussion. Ideas are presented in less time and in a more interesting manner.	The materials have to be selected in advance. Suitable materials are not always available.
11. Plenary sessions	Conclusions, recommendations and questions are generated regarding ideas presented within a specified period of time (i.e., modules). These are discussed by the whole group.	Ideas are summarized. It provides opportunity to the training in terms of connecting one topic/part to another.	Adequate time should be provided. Repetitions should be avoided unless called for.

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Training Methods	Description	Advantages	Limitations
12. Demonstration	Actual presentation of a technique by the resource person or the participants.	Experiential; the participants actually see the method.	Requires more time and materials.
13. Coaching	A one to one situation where the trainer provides on the job personal development in order to help the trainee improve his performance.	• undivided attention from the trainer • more immediate feedback of results.	• expensive on trainers' time • only small numbers can be dealt with at one time • success depends on quality of trainees
14. Individualized Learning	Trainer assumes the role of a learning manager. Each trainee is responsible for completely learning tasks and evaluating personal achievement.	Trainee moves ahead at the proper pace, builds self-confidence and ability to make decisions in timely and accurate manner.	Requires very well-prepared materials. Such materials are very costly to produce and upgrade.

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- provide for interaction?
- encourage communication?

Checklist for Determining the Value of a Method as a Teaching Tool

- Is it effective?
- Is it flexible?
- Can it be combined with other methods?
- Does it have broad application?
- Can it be re-used?
- Can it be revised?
- Does it allow for trainer initiative?
- Can it be used with mixed ability groups?
- Is it suitable for large audience?
- Is it economically viable?
- Is it suitable for all trainers regardless of experience?
- Is it fast?

CCRDA

Sources:

Training Methods and Techniques (mimeographed handout), Trainers Training Seminar Workshop, IPM, PMAP.

Selecting Instructional Methods, Strategy and Techniques (handout), Trainers Training Seminar, NMYC.

Training Methods (handout), Training Management Seminar Workshop, OCEE, CSWCD, UP.

Walton, Ron, Trainer of Trainers Training Manual, EITB, London.

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EFFECTIVE COMMUNICATION

INTRODUCTION

Communication is the process by which people attempt to share meanings (information, knowledge, ideas, attitudes) in the transmission of symbolic messages. This definition calls attention to three essential points:

① Communication involves people, and understanding communication involves trying to understand how people relate to each other.

② Communication involves shared meanings which suggests that in order for people to communicate, they must agree on the definitions of the terms they are using.

③ Communication is symbolic: gestures, sounds, letters, numbers and words can only represent or approximate the ideas they are meant to communicate.

The basic purpose of human communication is to achieve one's objectives. We try to achieve an objective by trading information. In the process of trading information to achieve one's objectives, the personality of people is revealed. In other words, the observable external communication signs are linked to one's personality and governed by it.

APART FROM THE WORDS HE MAY BE USING, IS THIS MAN'S WAY OF COMMUNICATING REVEALING SOMETHING ABOUT HIS PERSONALITY? ARE YOU SURE WHAT YOU COMMUNICATE TO THOSE WITH WHOM YOU WORK?



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The two important communication signals that people use to relate with each other are verbal and non-verbal. The receiver of communication looks for congruity in the two media of the sender. Incongruity leads to doubt about the actual intention of the sender.

THE COMMUNICATION PROCESS

When two people engage in communication, they go through various stages of the communication process before a message is actually passed or transmitted from one person to another. These stages are sometimes outlined as follows:

① Getting an idea (deciding what to convey to the receiver)

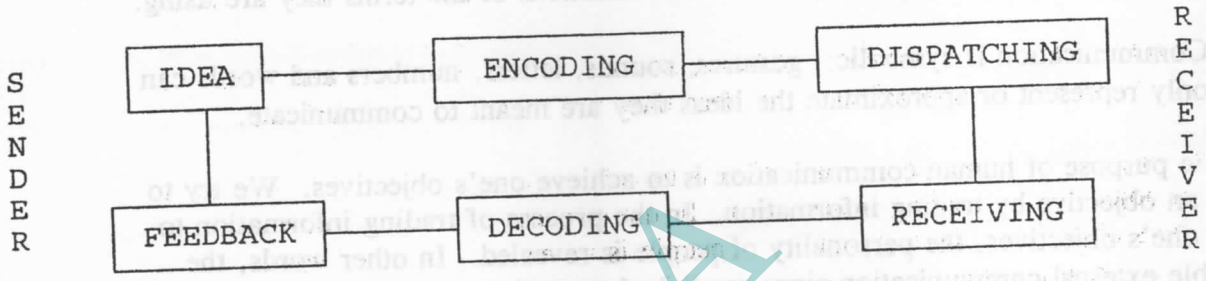
② Encoding (putting the message in communication language)

③ Dispatching (selecting a suitable route and sending the message)

④ Receiving the message (the receiver gets the message)

⑤ Decoding (interpreting)

⑥ Feedback (the receiver confirms he received and understood the message



As the message is sent from the sender to the receiver along these stages, it diminishes in accuracy and intensity by the time it reaches the receiver. At each stage, the message diminishes in strength. For example, a message with x6 strength diminishes to x5 when it is put in a language, to x4 when it is dispatched, x3 when it is received, x2 when it is decoded and x1 at the time of feedback.

WHAT THE SENDER SHOULD DO

① Assess the receiver and his situation to understand his specific experiences.

② Identify what motivates the receiver to think or act the way he does.

③ While encoding or verbalizing the message, make sure that it is:

- ✓ as specific or concrete as possible/
- ✓ as organized as possible to make the receiver understand;
- ✓ as brief as possible to hold the attention of the receiver.

④ Select the best medium possible (one which would minimize distortions, and ensure the message is received as it was sent).

⑤ Check whether the receiver has understood.

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WHAT THE RECEIVER SHOULD DO

1. Check whether the message coming in is relevant to his interest, actual or potential;

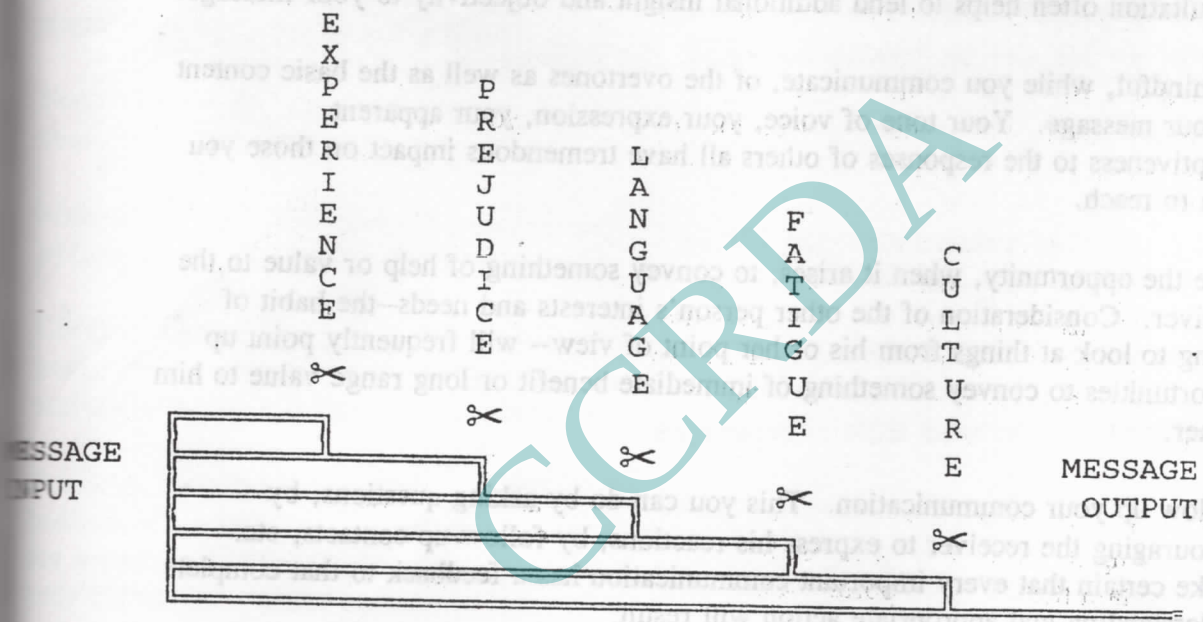
2. Make sure that both the physical and psychological conditions are conducive for receiving the message;

3. Pay attention to the meaning rather than the words;

4. Check back with the sender whether what he thinks he has understood matches with the idea that the sender has in mind.

COMMUNICATION BARRIERS

There are a number of factors which interfere with the message and make it less likely that it would be understood correctly. Some are represented in the diagram below. Can you think of others?



WHAT ARE SOME OF THE MAJOR COMMUNICATION BARRIERS YOU FACE AS A DEVELOPMENT MANAGER? HOW CAN THEY BE MINIMIZED?

Communication problems create misunderstandings, stress, and difficulties in the office, in the community, and within the NGO sector as a whole. They have a tremendous impact on the efficiency and effectiveness of our work. There is no magic formula for improving communication. More than anything, it takes self assessment, awareness, desire, and hard work. However the following ideas can sometimes help...

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TEN COMMANDMENTS OF GOOD COMMUNICATION

❶ Seek to clarify your ideas before communicating. The more systematically we analyse the problem or idea to be communicated, the clearer it becomes.

❷ Examine the true purpose of each communication. Before you communicate, ask yourself what you really want to accomplish with your message. Obtain information? Initiate action? Change another person's attitude? Identify your most important goal and then adapt your language, tone, and total approach to serve that specific objective.

❸ Consider the total physical and human setting whenever you communicate. Meaning and intent are conveyed by more than words alone. Consider, for example, your sense of timing, social climate, etc.

❹ Consult with others, where appropriate, in planning communications. Such consultation often helps to lend additional insight and objectivity to your message.

❺ Be mindful, while you communicate, of the overtones as well as the basic content of your message. Your tone of voice, your expression, your apparent receptiveness to the responses of others all have tremendous impact on those you wish to reach.

❻ Take the opportunity, when it arises, to convey something of help or value to the receiver. Consideration of the other person's interests and needs--the habit of trying to look at things from his or her point of view-- will frequently point up opportunities to convey something of immediate benefit or long range value to him or her.

❼ Follow up your communication. This you can do by asking questions, by encouraging the receiver to express his reactions, by follow-up contacts, etc. Make certain that every important communication has a feedback to that complete understanding and appropriate action will result.

❽ Communicate for tomorrow as well as today. While communications may be aimed primarily a meeting the demands of an immediate situation, they may also be consistent with long-range interest or goals.

❾ Be sure your actions support your communications. In the final analysis, the most persuasive kind of communication is not what you say, but what you do.

❿ Seek not only to be understood but to understand. Be a good listener. Good listening demands that we concentrate not only on the explicit meanings another person is expressing, but on the implicit meanings, unspoken works, and undertones that may be far more significant.

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tening can be facilitated by:

paying attention to the person who is speaking;

hearing the speaker's point of view with an open mind;

understanding the feelings behind what is being said;

hearing what is not being said or what is implied but not uttered;

asking questions to clarify what the speaker means to say;

rewording and repeating what you have heard and checking with the speaker if you understood correctly; and,

summarizing main points or principles in the communication.

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Helpful Hints for Effective Communication in a Group

1. Seating arrangements affect a group's communication process. Classroom arrangement vs. circle arrangement.

2. Ensuring that one person speaks at a time.

3. Discouraging subgroups from indulging in side-talks.

4. Encouraging and supporting all members to speak.

5. Respecting individual opinions and suggestions.

6. An understanding of how different members relate to each outside the group could give a clue to certain trends in the group's communication.

Obstacles for Effective Communication

- filtering what we hear and say through our values and attitudes
- work pressure
- physical well being
- family atmosphere
- differing concepts
- different meanings for the same word or experience
- language

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ing Feedback

dback helps others change their own behavior. It gives people information about their behavior influences others, or how they are performing a task. It keeps ple's behavior focused on better ways to achieve goals. Feedback is generally more ul if it:

Describes: it reports the facts, not your own ideas about why something happened.

Specifies: it focuses on a specific instance of behavior, rather than addressing general issues that makes the receiver defensive.

Takes into account the receiver's readiness for feedback.

Takes timing into account: the closer the feedback is to the moment when the event took place, the better. However, critical feedback in front of others may be damaging, even if it is given shortly after the event took place.

Focuses on a few items at a time: running down a list of items makes the receiver shut down or become too defensive.

Means to help: destructive comments serve only the aggressive needs of the person giving the feedback and disregards the needs of the person receiving it.

Checks: the person giving the feedback checks with the receiver by asking for paraphrases or reflection to make sure that the intended message is received and understood.

Provides Positive Reinforcement: Where necessary, you can help build up an individual's confidence by reinforcing those things he is doing well. It is very easy for a person to feel that the criticism affects his entire work effort, when, it might only influence a small portion of it.

GCRDA

How to Survive a Training Assignment - Steven K. Ellis
Human Resource Development: A Trainer's Guide - Les Donaldson and Edward Scannell

Feedback Receiving

The importance of a feedback to the receiver is as good as how he accepts it and improves his performance or behavior from it. Here are few reminders to a feedback receiver to ensure positive and reinforcing results:

1. Listen - this is foremost an important trait in effective communication and feedbacking. Listening promotes clarity of the message being fedback and enhances positive results on the receiver's part. Allowing yourself to listen to a feedback creates a self-reflecting mood to the receiver and points out his weaknesses or failures that need to be improved or changed. This also helps the feedback giver to feel comfortable and sincere in expressing his points/opinion.

2. Be Open-minded - the message of the feedback can best be understood and analyzed if the receiver let's himself to be free from bias, prejudice and self-defensive behavior.

3. Clarify points when necessary - the importance of asking or validating points to the feedback given cannot be over emphasized. This will ensure that at the end of the feedback session each detail of the message is conveyed correctly to the receiver. Doing this also creates a two way interactive communication and a harmonious relationship between parties. This also precludes a feeling of a parent - child or a superior - inferior type.

4. Focus on the importance of the feedback

5. Show gratitude in the end - there could be no better way at the end of a feedback session than an appreciation on the part of the receiver to the giver of the feedback. This reveals that the feedback is well conveyed and taken by the receiver. It puts off some doubts on the feedback giver that he might have inflicted negative feelings and prejudice to the receiver. Ultimately, it boils down to the improvement of the person in his work, relationship and self-esteem.

CGRDA

Source:

Delivering Effective Training - Tom W. Goad
Human Resource Development A Trainer's Guide - Les Donaldson and Edward Scannel

Barriers in Effective Communication

Perception - this barrier is perhaps the single most important one in all of communication. How often has it happened that once we get our mind set, or once we see things our way, we have difficulty emphatizing with someone else? The adage "My mind is made up, don't confuse me with the facts," is all too appropriate. People see things differently. Participants often "see" what they want to see. Your efforts will help them see what the session purports to teach.

Language - occasionally in oral and written communication, trainers often use words meant to IMPRESS rather than EXPRESS. These words may look very nice or sound very eloquent when heard, but if they are misunderstood, they are not performing their task. The job of the trainers is to inform not necessarily to impress.

Inflections - it's not what you say it's HOW you say it. A grumpy looking and sounding person saying "Good Morning" may convey the opposite meaning of the salutation but a cheery greeting will mean sincerely and too well.

Personal Interest - when the subject matter personally affects the trainee, communication efficiency pick up considerably. Instead of always talking of my interest, let's instead speak of you and your interest. Too many of us forget that the most important word in the English language is YOU. When we talk in terms of the other person, that person becomes involved and a more effective communication results.

Emotion - as we all know, emotions often produce devastating obstacles to good communications but if they are kept in check, no problems may arise. But let one person say the wrong thing - and blast off! Therefore, sensitive topics or words must be identified and treated with care.

Preconceived Notions - all too often, we make assumptions and later wish we hadn't. In communication we may see something and make inferences that are not valid.

Attention - Essential to getting one's message through to another person is the attention of the receiver. In trainings, we must keep the session interesting and informative enough to both capture and maintain the interest of the participants. Long and boring presentations undoubtedly will result to physically present but mentally absent listeners.

Wordiness - too much words in both verbal and written communications invites the receiver to turn off the sender. Speakers that "go round and round the bush" will let the participants wander just what point is he driving at.

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Inferences - many would jump to conclusions before all facts are in. We often make assumptions or inferences that may prove to be incorrect.

We see or read something and may think it means something quite different from what the sender intended it to mean.

Semantics - Words which meaning are closely connected. Multiple meaning of words present a serious roadblock to communication. Confusion can be presented if a trainer is cautions in the use of words and the meaning it defines.

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CHECKLIST FOR THE OBSERVATION OF A TRAINING SESSION

CONTENT

Selection of content

- Based on assessed training needs
- Relevant to learners' lives

Organization

- Connection to previous session
- Logical sequence within session
- Synthesis at the end of the session, referring to objectives

Objectives

- Stated in behavioral terms
- Accurately reflect key areas of knowledge, skills, and/or attitudes being covered

PROCESS

Experiential Learning

- Learning begins with an experience
- Learners given opportunity to react to an experience, discuss information
- Learners draw conclusions based on their discussion or exercise
- Learners make connection between session content and application in their lives

Facilitation Techniques

- Trainer uses questions to promote discussion
- Learners are encouraged to ask questions
- Use of paraphrasing and summarizing
- Effective management of flow of discussion
- Adequate and clear directions provided
- Effective use of non-verbal communication

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Learning Climate



Engagement of participants' interest in the subject matter
Active participation of learners
Positive rapport between trainer and learners
Feedback is given to participants with honesty and tact
Safe environment free from embarrassment

Visual Aids



Appropriate selection and use of visual aids to enhance presentations
Organized, legible writing on the flipchart
Appropriate use of the flipchart

Training Techniques



Appropriate choice of techniques for attainment of objectives
Techniques appropriate to kind of learning (K/S/A)
Sequence of techniques leads to practical application of subject matter

Timing



Trainer is aware of time limits and facilitates accordingly
Learners are made aware of time limits for small group activities
Sufficient time is allotted for mastery of the subject matter

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TRAINING MATERIALS

Training materials are teaching aids that are used during training to facilitate effective communication and learning.

TYPES OF TRAINING MATERIALS

Print materials

Materials printed on paper, to be read by the user (books, manuals, handouts, bulletins, field guides, newsletters)

Visual Aids

Materials displayed in front of the user, to be viewed from a distance (video films, transparencies, flipcharts, posters, slides)

ROLE OF TRAINING MATERIALS IN TRAINING

1. Sources of reference during & after training
2. Guide trainers & trainees through the course.
3. Illustrations facilitate the learning of ideas or tasks.
4. Those designed for self study facilitate learning in absence of facilitator, and at participants' own pace.
5. Make learning interesting by attracting & holding attention of trainees.
6. Help to generate discussion, making the learning process more interactive.
7. Illustrations can help to overcome limitations of time, size and space.

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EVALUATING TRAINING MATERIALS

Training materials should be evaluated for four main elements: authenticity, appropriateness, technical qualities, and utilization.

Authenticity

This refers to the accuracy and up-to-dateness of the information contained in the training material.

Appropriateness

This refers to the suitability of the material and its relevance to the needs and educational level of the audience.

Technical quality

This relates to the design, the quality of visuals and the length of the training materials.

Utilization

This refers to how easy it is to use the training material and its suitability in the different situations in which it may be used.

WRITING PRINT TRAINING MATERIALS

Sources of information for writing the text

1. Knowledge & experience of the writer
2. Handouts or notes from previous training courses
3. Books and other published materials
4. Unpublished reference materials written by experts

Guidelines for effective writing

Use simple language
Go straight to the point
Write clearly. Don't be vague
Use short words, sentences & paragraphs
Organize points logically
Avoid jargon, slang, & idioms
Explain unfamiliar words & use consistent terminology
Avoid repetition & redundancy
Use acronyms carefully
Use good illustrations as necessary (pictures, graphs, maps, etc.)
Give references appropriately

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ATTRIBUTES OF GOOD TRAINING MATERIALS

Print training materials

Provide accurate information that meets objectives of the course
Be easy to read
Be easy to understand
Be well organized & presented in a logical sequence
Be well illustrated to help clarify topics & facilitate comprehension
Contain relevant examples of points being made
Be easy to handle and store
Be attractive to the user
Be durable
Be relatively cheap to produce

Visual aids

Be able to attract & hold attention
Be relevant to the topic presented
Suit the language & knowledge level of the target audience
Be simple
Effectively convey messages which are easy to understand
Help to clarify ideas



CGRDA

CONSIDERATIONS IN DEVELOPING TRAINING MATERIALS

1. The target audience for the materials
2. The objectives of the training course
3. The sources of funds, information and production items
4. The schedule for writing, reviewing and producing the materials
5. The plan for distributing the materials
6. The plan for evaluating the materials

USING VISUAL AIDS

1. Make sure the visual aid is appropriate for the specific training situation. For example, is here electricity? How large is the group?

2. Rehearse the presentation and decide on the point in the presentation at which it is most to introduce the visual aid.

3. Make sure all visual aids and equipment are in good working order before presentation.

4. Arrange the seating pattern of the audience so that they can all see the visual aid clearly and hear you at the same time during presentation. Visual aids must be seen!

5. During the presentation, face the audience, not the visual aid, and talk to the audience, not to the visual aid.

6. Make sure your ideas are presented in a logical sequence and present the accompanying visual aids in the same sequence.

7. Leave the visual aid in view for an appropriate length of time.

8. Do not block the view of the audience by standing in front of the visual aid. Always remember that visual aids are meant to be seen.

9. Think about an alternative to the visual aid being used in case there is a power failure or other unforeseen problem.

10. Let visual aids complement your presentations; do not leave it all to the visual aids.

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Training Materials

What are training materials?

- Anything that helps and supports the communication to:
  - be effective; and,
  - achieve its objectives.
- Can be all sorts of things, with differing uses, designs and media.
- Can perform a variety of functions to meet the overall objective of transferring a usable skill.

Media are the technologies used to convey the information or message to be presented in training.

Materials are the particular programs, charts or images which are to be presented in the training.

> A chalkboard is the 'media'. Your writing on it is the 'material' which the trainees see in the training.

Remember!

- Unlike general media or communication (reference books, newspaper, TV, radio), training materials are media that are linked to people working together face-to face. This human experience has great value because people tend to learn from each other in groups and from teachers or trainers, by personally relating, as well as by receiving information.
- Media are useful tools training but you need to know how to use for them to work well.

> **"The most appropriate 'media' for active learning and change is the personal contact of teacher to learner ... making this as effective as possible is what the use of materials is all about."**

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Why do we need training materials?

Training materials can:

- help the trainer communicate the message for the trainees to apply.
- help create an interest in the subject to keep the attention and increase the learning retention of the trainees.
- clarify complicated points by focusing on the essential information, showing what is important and presenting it in a logical order, step-by step.
- help the trainees to practice the skills they are being trained in through role play, case study, etc.
- help people learn by actively participating, by doing (demonstration).
- **Materials can help them remember information, a step towards the process of acquiring, practicing a new skill.**

Always remember!

- Your training materials can be prepared easily if it is organized in the context of a training session but media and materials can be used in other less formal and sometimes higher context (program implementation) as well.
- **Effective materials need to really 'illustrate' the information, not just give key words.** They can be used to show what the idea looks like and how to use the information. Materials can be like a map. That show how to get from a to b quicker than you could with conventional directions using only words. They can be used to help trainees get from one skill level to another, **quickly and effectively.**
- Materials, however, should:
  - have right message for the particular training to be an effective support
  - be geared to the needs of the trainees, the training session and trainees level
  - be appropriate in terms of language and culture, as well as in relation to the subject matter.
- Materials can support the talking / seeing / doing in a training.

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"We forget what we hear, we remember what we see, we understand what we do but we are able to apply what we hear, see and do."

Types of training materials

Types of training materials according to its use:

1. Trainers' guide. Training materials like manuals or training guides are needed to help the trainers and field workers run training and use media to communicate effectively. Examples manuals, training guides, workbooks, textbooks.

2. Visual aids. These can be used during training sessions for the trainees to see and understand the message. Examples: chalkboard & chalk, drawing/illustration/graphics, photographs, object, sample, specimen, flip charts (handmade and printed), overhead transparencies.

3. Exercise materials. Exercise materials should be provided during training sessions like the worksheets, exercise or models. These can help learner practice the new skill. Examples: worksheets, models.

4. Take home materials. Illustrated posters, booklets, leaflets or other handouts can help the trainees take the training message home to their neighbors and family. Such materials can help them implement their newly acquired learning. Examples: handouts, leaflets, booklets, posters, displays/exhibit.

5. Broadcast Media. Broadcast media can include radio, television, folk media and others. These serve as reminder for the trainees to implement and follow up their training at home. These can also be used to support the training by creating a demand to learn a new skill. Examples: folk media, radio, television, video.

Visual Aids

There many types of visual aids from which to choose. Some rely on drawings alone, some on drawing with text, others on text alone. They can be used in many ways to support your education activity. For instance, visual aids can support a presentation or a lecture, to illustrate a story, or to provide background material or more detail. Examples are flip charts, slides, black boards and the like. They can also speak for themselves, like distributing posters to all health centers in a District, providing a hand-out during your course, or writing a manual on a subject.

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Using visual aids is important because many people remember more of what they see than they hear. 85% of learning is visual. Of course, it is even better if you have a chance to let people do the things you teach.

When using visual aids, it is important to remember that they are a training material, not a method. The use of visual aids should not be guided by the material but by the following questions:

WHAT is the message I want to communicate? (what is my objective)

WHO is my audience? (e.g. age, literacy, gender)

WHAT methods will support my message? (e.g. lecture, exercise)

WHAT materials will support my method?

Once you have answered the last question, you can decide whether you need to use visual aids at all, and if so, which ones will be appropriate.

Some commonly used visual aids are described on the following pages. This is not a complete list, but one to help you think through some of the questions you need to answer before you can decide which type is suitable for your situation.

Posters

What it is:
A message on large sheet of paper: an illustration (a drawing, a photo) and/or a simple written message.

Audience:
No limit, because it is not necessary for everyone to look at a poster at the same time.

Advantages:
Inexpensive, easy to make. Does not need much time to prepare and use. Easy to transport.

Disadvantages:
Deteriorate rapidly. You need a good artist. Easy to put too much or too little information.

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Bulletin Board

What it is:
A surface, at least 3/4m by 1m, into which pins can be stuck.
Drawings, messages, announcements, photos can be displaced on the board.

Audience:
Same as for a poster.

Advantages:
Inexpensive, can be home made from local materials. Useful for small group discussions.

Disadvantages:
Weather can easily damage the things on the board. You need an on-going supply of good educational material to put on the board.

Display

What it is:
A large piece of board or cloth, on which information is displayed using photographs, drawings and text. The difference with a message board is that it is 'static' that is, it cannot be changed.

Audience:
No limit, because it is not necessary for everyone to look at the board at the same time.

Advantages:
Can be made very attractive. If you use scenes from the village itself which people can recognize, they will like it very much.

Disadvantages:
A good display will ask for a lot of preparation, making or choosing drawings, photographs, writing text, etc. The cost will depend on the type of illustrations used (e.g. big photographs are costly).

You need a wall or a method of fixing boards/displays to stay up.

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Flip Charts and Other Sequence Pictures

What it is:
A series of pictures, diagrams or titles on a related subject.

They reveal the story or theme step by step.

They can be illustrations on paper or cloth, bound together with rings, strings or attached to a piece of wood. They can flip over in sequence.

Audience:
Up to 30 people. Audience size depends on the size of the flip chart.

Advantages:
Inexpensive, can be home made, can be easily transported. They are easy to show and are easily understood. They offer a good way to discuss information in sequence. Because they are bound, illustration stay in the right order. The pictures give a visual summary of the important points you want the audience to remember.

Disadvantages:
You cannot slowly build up a complete picture like with the flame board. Deteriorate with constant use. You need a good artist.

Blackboard

What it is:
a black board is a hard surface painted green or black, on which to write or draw with chalk.

Audience:
Up to 30 people. If used with more, a large board is needed and careful audience placement is necessary.

Advantages:
Inexpensive, can be home-made, easy to maintain. Makes participation by the audience possible.

Disadvantages
May be difficult to transport.

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White Board

What it is:
The white board is the modern version of the black board: a polyester surface on which to write with a special felt pen.

Audience:
See above.

Advantages:
Very easy and nice to use. Felt pens make very clear writing and drawing. Participation by audience possible.

Disadvantages:
This board is more expensive than the blackboard, especially in use: white board markers are costly and don't last long.

Transport may be difficult.

Overhead Projector

What it is:
A piece of equipment that can project transport imaged onto a wall or screen. It is a very useful medium for training; it can be used to present previously prepared material or like a blackboard.

Audience:
Up to 100 people, if the projection screen is large enough. It also depends on seating arrangements.

Advantages:
An OHP is a very flexible piece of equipment, and it can project very large images. It is usually strong and can be the center of attention for a large audience.

Disadvantages:
They are expensive and depend on electricity. They are not easy to transport. Transparencies may be expensive or hard to find.

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Flannel or Cloth Boards

What it is:
A piece of cloth, attached to a hard surface, on which cut-out figures will stick if backed with flannel or sand paper.

Audience:
Up to 20 people. Audience size depends on the size of the flannel board and the size of the figures that are being used.

Advantages:
Inexpensive, easily made from local materials. Easily maintained and transported in remote areas. The figures can be used in different presentations. Ideal for showing a sequence of activities or events, as you can build up your story as the presentation goes on Easy to invite the audience to participate.

Disadvantages:
Requires a lot of preparation. May be difficult to use outside if there is any wind.

Flash Cards

What it is:
Illustrations made on heavy paper that is usually smaller than an A4. The illustrations are not bound, but may be arranged in sequence.

Audience:
Up to 15 people. Because the illustrations are small, no more than 15 people should be in the audience.

Advantages:
Inexpensive, can be home made. Very easy to transport. Good way to give information in sequence to small groups.

Disadvantages:
Deteriorate with constant use. If making flash cards yourself, you need some artistic ability. The use is limited to small groups.

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Models

What it is:
A model is a copy of an actual object, usually on a smaller scale. Like the actual object, a model is three-dimensional and can be looked at from all sides. The more the model is true-to-scale, the better it is as teaching aid.

Models can be made from local, cheap materials or can very sophisticated.

Audience:
2-30

Advantages:
Models can be felt, seen and used, and as such have a great attraction for people. A model can make the audience understand a subject they are not familiar with, e.g., not knowing what a *shadoof* is, but seeing one a small scale will explain the audience how a *shadoof* works and how you can make one.

Disadvantages:
Many models are easy to damage, and some cannot be transported, e.g., when made from earth or mud. In most cases, they can only be used with small groups. There is some danger that people will get a wrong idea of the size of the actual thing if they have only seen the small model.

Making models will ask for some skill.

Source: Jan Willem Rosenboom, Oxfam UK/I

De la Vega Lilian, Arevalo Mae and Montes Ray. Training of Trainers Course, March 1997.

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Types of media	Duration of preparation and production	Ease of use	# of trainees	Cost of use		Equipment cost	Dependent on electricity	Can be changed
				cheap	costly			
chalkboard	short		2-50	x		x	no	yes
drawings/ illustrations	short		2-20	x		x	no	yes
photographs	average		2-20		x	x	no	no
flip charts								
handmade	short		2-30	x		x	no	yes
printed	average				x		no	no
overhead transparencies	short	x	2-100		x	x	yes	yes
models	long	x	1-5	it depends on the models				
samples, specimen	it depends on the type/ sample	x	1-5	it depends on the samples or specimen				
posters	average		1-50		x	x	no	no

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Guidelines for the Development of Visuals Aids

1. Keep pictures as simple as possible.

   The simpler the picture, the easier it is to draw the attention of the audience to what you want to show them.

2. Leave out unnecessary details, but do not make the picture too simple. Line drawings toned in are the easier to recognize.

3. Leave out backgrounds. They draw the attention away from what you want to tell.

4. A picture is understood better if it has only one, sharp meaning. When you want to tell more than one thing, it is better to make more than one picture.

5. When you show a series of pictures together on one page or poster, make sure that the right order is understood. Not everybody looks at pictures in the same order.

6. Illustrate a person's whole body, and not only a part of it. If only a part is shown. (like a head or feet) it is often not easily understood.

7. Pictures will be more successful if faces, clothing and building are based on what is familiar locally.

8. Food, animals and objects (like a spoon or a pot) are often more difficult to recognize than pictures of persons.

9. Use only common objects. For example, do not show a water jar people are not familiar with.

10. Colored pictures are attractive, but are not understood easier than black and white pictures.

11. If you want to use pictures in front of an audience, make sure that they are big enough to be seen by everybody.

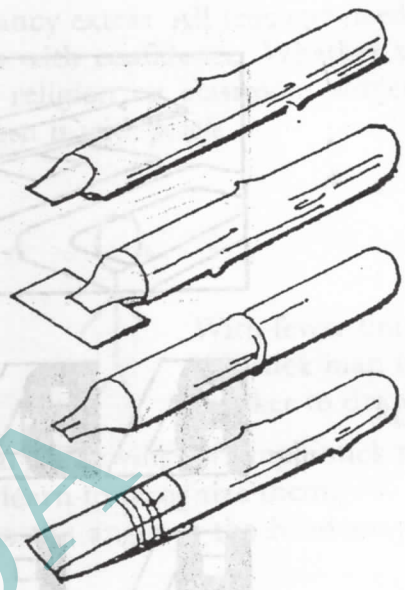
12. Avoid making very small objects or animals too big. For example, when you show a picture of a very big mosquito, people will not recognize it as the insect they know.

13. Perspective (for instance, a house in the distance) is often very difficult to recognize.

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MAKING SIMPLE ILLUSTRATIONS FOR VISUAL AIDS (NO NEED TO BE AN ARTIST)

Make a broad-nib pen:



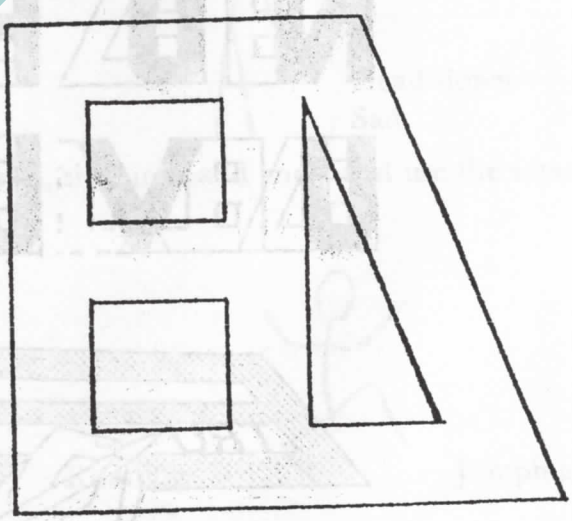
—from a twig sharpened like a chisel.

—with a piece of matchbox wood fitted into a slit in a twig or in the reverse end of an ordinary pen holder.

—from a short length of bamboo.

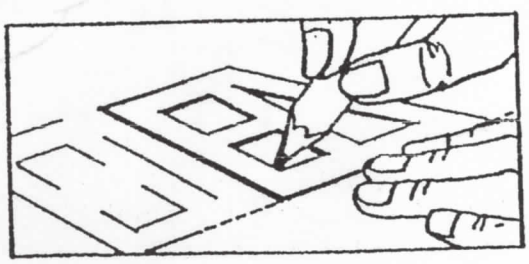
—take an old felt hat and cut a strip 6 cm long. (The width of the strip will depend on the size of lettering needed.) Bind the strip across the blunt end of a pencil or similar stick.

Cut-out letters from newspaper headlines, advertisements, catalogues, calendars and other printed matter. By keeping the different sizes separate you can select what you need and paste them up easily.



Make a Unistencil

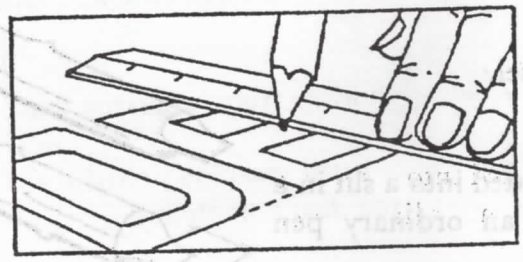
This is a very useful tool when you need large lettering (10 cm to 20 cm high) for headings and captions. Cut an outline from cardboard or old X-ray film. Keep the same general proportions whatever size stencil you are making.



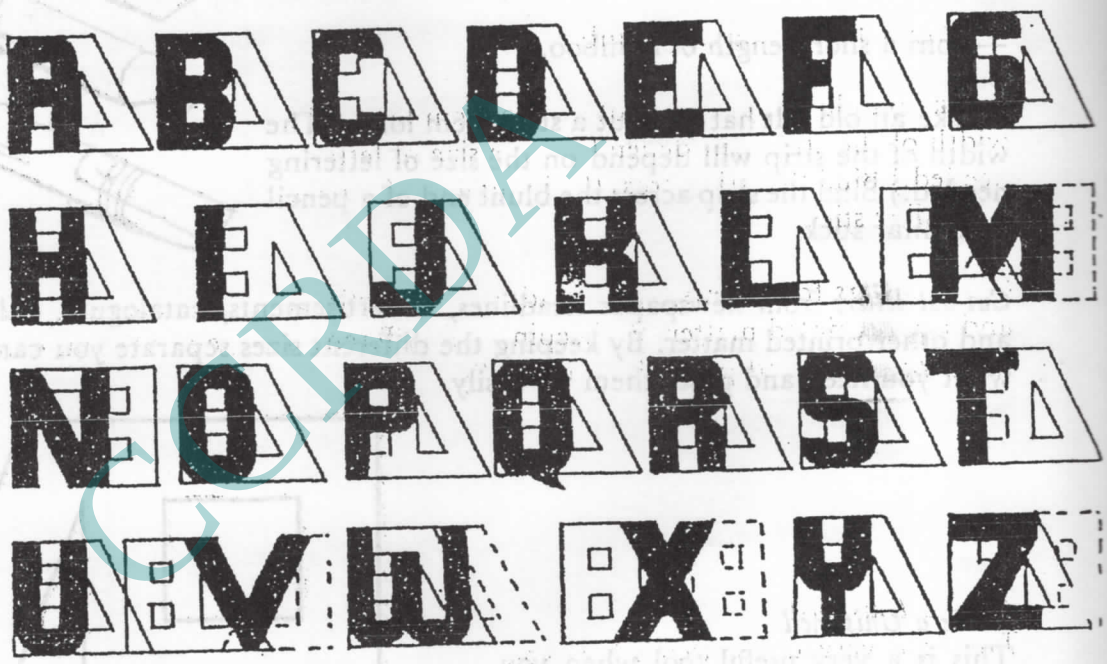
Draw a baseline on which the Unistencil can be aligned.

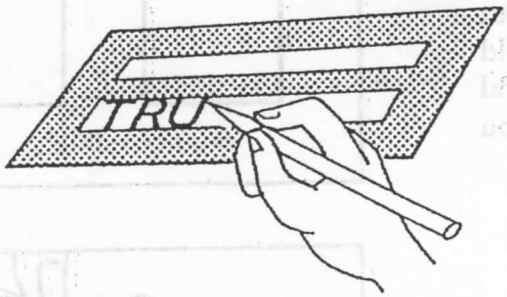
Trace in pencil the basic form for each letter you wish to draw.

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Draw in the necessary lines or curves to complete the letters.
Finish off the lettering with pen or brush.





Make a Lettering Guide
Use cardboard or old X-ray film. Cut parallel slots to suit the size of lettering needed.
With English (Roman) lettering this guide is most suitable for capital letters. It can also be effective with Chinese characters and the Devanagri script in India.

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CHALKBOARD ILLUSTRATIONS

Legibility and speed are essential, so concentrate on lines which express your meaning and omit all unnecessary details and fancy extras. All teachers need to be able to draw stick men and simple outlines with confidence. Whether you are engaged in teaching agriculture, health, religion or classroom subjects, stick *men* are important because your first concern is with *people*.



With shoulders and hips this stick man can turn sideways.



With fewer lines this stick man is quicker to draw.

Fingers, toes and facial features are unnecessary. Drawings of simple stick men are easily understood and most people quickly learn to recognize them.

An oval head is better than a circle because the angle of the head may be suggested more easily.



Head up—
Cheerful



Head down—
Sad

Study the way people stand, walk, run, sit, jump and kneel and use the same basic lines for your stick men.



Walking

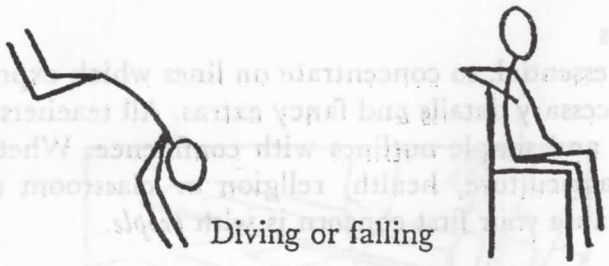


Running



Jumping

SCRDA



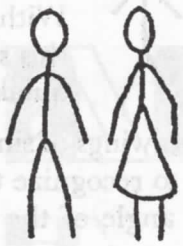
Diving or falling

Sitting on a chair



Praying

Add one or two extra lines to give more meaning. For example:



A man and his wife



An Indian and his wife



A Chinese worker



A teacher

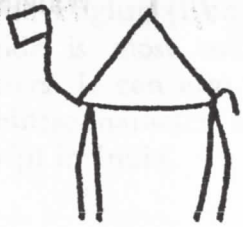


A clergyman

Use the same method for animals and objects. Concentrate on a few lines which will express the main idea.



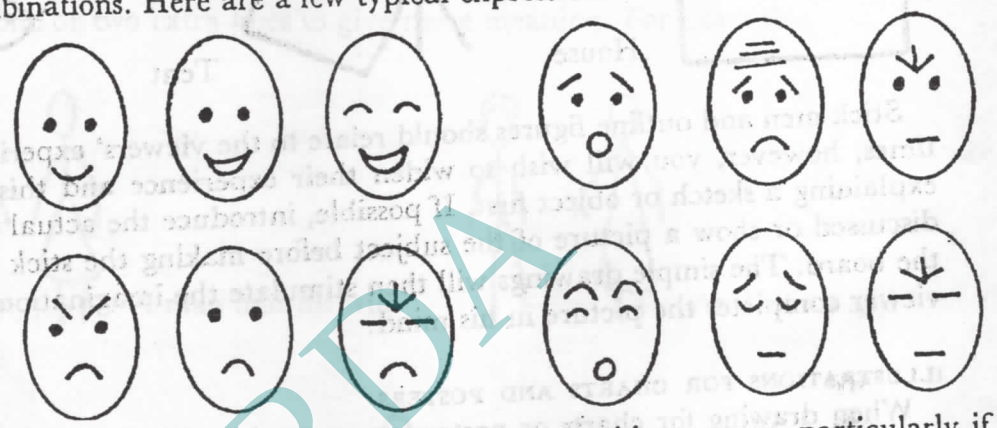
Donkey (head and ears)



Camel (hump)

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Variations of these basic features may be put together in dozens of different combinations. Here are a few typical expressions.



The additional details will help to get your ideas across, particularly if the poster or chart has to stand alone on display.

Remember that you are not trying to draw completely accurate and artistic pictures. Aim to draw clear, recognizable sketches and outlines.

COPYING AND ENLARGING PICTURES

Charts and posters are usually more effective if they include an appropriate picture. Magazine pictures will sometimes be adequate, but most illustrations in books and papers are too small for showing to a group. You do not have be an artist to use any of the following methods, but you will need to practise a little. It is possible to enlarge from a photograph, but much easier if your original is a line drawing.

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IDEAS FOR ACTION: ASSIGNMENT

The purpose of this assignment is to develop and reflect upon ideas for action in order to solidify learnings, enhance the degree of implementation of new knowledge and skills, and facilitate follow-up of the course.

Training for adults is not an academic exercise. Participants are expected to apply some of what they learn from the course to their own approaches to organization, management, implementation, facilitation and evaluation of training in initiatives of their own organizations.

This idea will be introduced early in the course. Participants should regularly take note of ideas which they feel they could implement, and reflect upon them and discuss informally with colleagues in the evenings. They will be encouraged to be realistic, considering those possibilities which are within the already existing resources of the organization, and their own scope of work as trainers.

Time is allowed, on the last day of the course, to share ideas with the larger group and receive feedback which will help to refine these ideas. It is expected that they will also share their ideas with others when they return to the job, and that ideas will be modified and improved through participation of other staff and community members before being implemented.

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