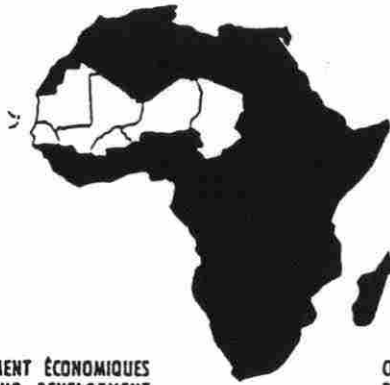


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ORGANISATION DE COOPÉRATION ET DE DÉVELOPPEMENT ÉCONOMIQUES
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CILSS

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PERMANENT INTERSTATE COMMITTEE FOR DROUGHT CONTROL IN THE SAHEL

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TRENDS IN DROUGHT AND DESERTIFICATION
CONTROL STRATEGIES
OF MAJOR DONOR AGENCIES
IN THE WEST AFRICAN SAHEL

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The ideas expressed and the facts given in this document are the sole responsibility of the author and do not necessarily represent those of the OECD, the Club du Sahel or the CILSS.

Key Words: Drought/Desertification/Environmental
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AGENCIES IN THE WEST AFRICAN SAHEL

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SUMMARY AND CONCLUSIONS

- (i) The major objective of this paper is to describe and analyze changes in drought and desertification control strategies in the West African Sahel since 1975. Changes in the strategies developed by CILSS and the Club du Sahel can more easily be traced than for other agencies as they have several times reviewed and revised their strategies and amply documented their strategy proposals. Another objective is to identify differences in accents and approaches within the donor community as well as between the different donor agencies and CILSS/Club du Sahel.
- (ii) Strategy development is an incremental process in the sense that over the years the relative importance of the different sectors has been subject to change and also within the sectors accents and approaches have tended to change every five years or so.
- (iii) In the mid-1970's there was little doubt that it would be possible to attain food selfsufficiency in the Sahel as all the prospective studies indicated that the available natural resources permitted a considerable expansion of food production. Only 10 years later that optimism has faded and growth rates for the different production sectors have been scaled down considerably.
- (iv) In the forestry sector accents have shifted subsequently from industrial plantations to village forestry and recently to family/individual plantations.
- (v) The objectives for development of rainfed agriculture in 1977 were to almost double the production of staple crops in the period till end of this century and to make rainfed agriculture less vulnerable to drought. Three principal strategies were to be employed to achieve these objectives: (1) colonization of new lands; (2) intensification of production; and (3) research and diffusion of short-season food grain varieties. By now it has become clear that ill-controlled colonization of new lands leads to unprecedented environmental destruction, rainfed agricultural production has not been intensified and the area planted with short-season food grain varieties is negligible.
- (vi) Ambitious targets were fixed in 1977 for the development of irrigated agriculture. According to a report by CILSS/Club du Sahel (1983) reviewing the situation at the beginning of the 1980's, the share of international aid devoted to irrigation agriculture is disproportionate to the results obtained up to now and disproportionate with regard to the true position of irrigation in the Sahelian economy.
- (vii) In 1979 it was assumed that cattle production could achieve an annual rate of growth of 6% accompanied by a 50% increase in productivity. Only 4 years later the conclusion was reached that

the limits to natural pasture on resources put a ceiling on herd growth. At present the intensification of agriculture is seen as the only way to produce more and better quality forage.

- (viii) Since the mid-1970's fundamental changes have occurred in the approaches to development. (a) People are given greater responsibility for individual and collective programmes of desertification control. (b) The role of the State is to assist population groups and their organizations and to carry out operations that exceed the competence and capabilities of local population groups: the State as facilitator rather than entrepreneur. (c) A multisectoral approach, which aims simultaneously at production (satisfying needs) and the environment (which it is designed to preserve and rehabilitate), is now considered more appropriate than a sectoral approach to development.
- (ix) Despite different accents of donor agencies in their policies and approaches to desertification control, a considerable consensus has emerged on the need to improve the management of renewable natural resources in the Sahel and on the need to transfer responsibility for desertification control activities to groups of resource users.
- (x) Although donor agencies generally recognize the urgency of desertification control activities, it is striking that the aid funds allocated to ecology/forestry and to the development of rainfed agriculture are low and decreasing.

INTRODUCTION

1. The major objective of this paper is to describe and analyze changes in drought and desertification control strategies in the West African Sahel since 1975. Both CILSS and the Club du Sahel have made major contributions to the development of drought and desertification control strategies. Changes in the strategies they developed since 1975 can more easily be traced than for other agencies as both CILSS and the Club du Sahel have through the years reviewed and revised their strategies and amply documented their strategy proposals. These strategy proposals will be briefly described and analyzed in section II. As will be seen in this section, strategy development is an incremental process in the sense that over the years the relative importance of the different sectors is subject to change and also within the sectors accents and approaches tend to change every five years or so. For example, in the forestry sector large-scale industrial plantations were favored in the 1970's, at the end of the 70's and the beginning of the 80's the accent shifted to village woodlots and the last few years the focus is shifting towards family and individual plantations.
2. The objective of section III is not to describe and analyze changes in drought and desertification control strategies of different donor agencies. This would not be feasible as most agencies do not have specific desertification control strategies. Many donor agencies have actively contributed to strategy development during the meetings and seminars organized by CILSS and the Club du Sahel and there seems to be a considerable consensus between the donor community and CILSS/Club du Sahel. The objective of this section is mainly to identify differences in accents and approaches within the donor community with regard to drought and desertification control *. Some general conclusions will be drawn about trends, accents and approaches analyzed or identified in the previous sections.
3. The major emphasis of this paper is on desertification control policies and strategies and much less on practice. Whenever conspicuous gaps between policy and practice can be discerned, they will be briefly indicated.

* Gorse, J. et al. (1987) have recently prepared an assessment of Renewable Natural Resources Management (RNRM) in the West Africa Sahel for the World Bank. They have added a complementary report on "General activities of major donor organisations in the field of RNRM in the West Africa Sahel. Whereas Gorse and colleagues briefly describe the RNRM policies and activities of major bilateral and multilateral agencies, they do not highlight differences in accents and approaches, which is one of the objectives of this paper.

ANALYSIS OF DROUGHT AND DESERTIFICATION CONTROL STRATEGIES DESIGNED BY
CILSS/CLUB DU SAHEL

4. In this section a concise analysis will be made of changes in strategies in several production sectors as well as of changes in approaches to drought and desertification control.

From drought control to desertification control

5. In March 1976 CILSS created a Working Group, which had as its main task to elaborate a strategy for medium and long-term development of CILSS member states. The mandate for this group was defined as follows: "the strategy proposed by the Working Group should permit Sahelian States to insure their food self-sufficiency and should lead to an autonomous development of these States". This Working Group formulated strategy proposals and programmes for ten major sectors: rainfed agriculture, irrigation agriculture, livestock, fisheries, protection of crops and harvests, human resources, transport and infrastructure, commercialization-price-storage adapted technologies, ecology and environment.
6. There was little doubt in this period that it would be possible to attain food selfsufficiency as all the prospective studies for the Sahel (FAO, 1976, etc.) indicated that the available natural resources permitted a considerable expansion of food production. Not only could food selfsufficiency be attained, it was also believed that export of agricultural products could be increased and industrial processing of agricultural products would create employment opportunities in the secondary sector and improve the balance of payments of the Sahel countries.
7. Drought was seen as a recurrent phenomenon, the effects of which could be mitigated through careful planning and economic growth. Virtually no mention was made of desertification and the sector "Ecology and Environment" was just one of the 10 sectors for which the Working Group had to formulate objectives, strategies and targets. The major problem of the Sahel was "to establish a new system of production which would permit an increased population to live and live better while providing for the future and, therefore, buiding a new balanced ecosystem". This objective could be realized, according to the Working Group, through the combination of two types of measures:
- a. The new techniques recommended for agriculture and livestock must be compatible with the ecological equilibrium.
 - b. All the measures aimed at insuring soil protection and restoration must be put into effect.

8. In the sector "Ecology and Environment" the major focus is on forestry and virtually no attention is given to structures for the conservation of soil and water on agricultural land or for the retention of water to increase the survival rate of seedlings and to accelerate tree growth.
9. Rainfall in the years following the drought of 1968 - 1973 was mostly well below long-term averages and more erratic than before. From 1983 - 1985 the region was again struck by serious drought, which produced a general spread of desertification phenomena. Sands and dunes began to move, grasslands degraded, trees died, surface water dried up, ground water levels receded and the flow of perennial rivers reached the lowest levels ever recorded. Faced with unprecedented desertification in the Sahara-Sahelian zone as well as in the Sahel-Sudan zone, it need not surprise that the focus shifted from drought control to desertification control. CILSS prepared a strategy for desertification control in the Sahel countries, which was submitted to a regional seminar on desertification held in Nouakchott in November 1984. One of the conclusions of the seminar was that drought had been treated as a factor restricting water availability and production, but desertification had not been confronted as a fundamental handicap to development in the Sahel. As a result the seminar attempted to design a strategy based on two objectives:
 - (i) Satisfying fundamental needs of population groups and food self-sufficiency in particular, and
 - (ii) preserving the land and ecological wealth and rehabilitating their production potential.

Forestry

10. Forestry has always figured prominently in discussions on drought and desertification control. As the following analysis will show, the approaches and the types of interventions in this sector have changed profoundly over the past decade.
11. The strategy for forestry development defined in 1977 comprised the following elements:
 - a) The satisfaction of needs, where fuelwood and construction wood are concerned, will be insured by village, peri-urban and industrial plantations, as well as by the development of sustained production in existing massifs.
 - b) The development and protection of grazing land will be insured by integrated sylvo-pastoral operations.

- c) The improvement of agricultural factors of production through the introduction of windbreaks for irrigated and dry farming, the planting of rural trees, soil protection and restoration activities, the protection of catchment basins.
 - d) The protection and exploitation of wildlife could be subject to regulations, leading to the creation of preserves that could furnish a substantial supply of meat to the population concerned.
12. According to Weber (1982) large scale tree plantations were favored in the late 1970's as fuelwood had to be produced for a rapidly growing urban population. No such emphasis can be found in the early policy papers of the Club du Sahel. These papers propose a major emphasis on village woodlots (Club du Sahel, 1979:90).
13. In a proposal for a revised strategy for "combatting drought and for development in the Sahel" (CILSS/Club du Sahel, 1980) two different chapters are dedicated to forestry. One chapter deals with "Energy and Forests" and the other with "Ecological balance". Compared to the previous policy documents there are several new elements. For the first time the need for energy economies is stressed (high-efficiency woodstoves, drying and salting of fish rather than smoking, etc.). The gap between what is needed and what is actually achieved in tree planting is enormous. It is stated that at least 150,000 hectares should be planted each year in order to be able to cope with future energy demands, but this is 50 times the rate of tree planting in that period. The solutions envisaged are to decrease the costs of tree planting and a massive participation of the population in tree planting as well as in the maintenance of woodlots. In no earlier document had the need for popular participation in tree planting been that strongly expressed.
14. An analysis of the Ecology-Forestry activities in the different Sahel countries (CILSS/Club du Sahel, 1983:35) shows that although some village plantations have achieved a certain measure of success, in general, the situation in this sector is no better than in industrial plantations. Experience in Burkina Faso indicates that rural dwellers are better motivated in the case of family plantations and according to the sector analysis this should serve as an incentive to the people responsible to encourage this type of reforestation.
15. The management of natural forests has remained an important element in most documents concerning forestry policies. As for tree planting, the focus has changed since the beginning of the 1970's. In the first half of the 1970's the accent was on large-scale industrial plantations, in the second half of the 1970's and the beginning of 1980's village woodlots seemed to be the most appropriate approach to tree planting and since the middle of the 1980's the focus is shifting to family and individual plantations. At the same time it is increasingly recognized that land laws and forestry legislation should be revised in such a way that trees belong to and can be exploited by those who planted them.

16. A most remarkable feature in most CILSS/Club du Sahel policy reports on the forestry sector is the lack of explicit attention to the role of women in forestry. Even in the most recent publications emphasizing the crucial importance of local participation in tree planting, gender aspects tend to be neglected.
17. During the period 1975 - 1985, the aid granted to the ecology and forestry sector represented between 1.5 % and 2 % of the total amount of aid to CILSS countries. After a sharp increase in the period from 1975 to 1981, aid commitments to the ecology and forestry sector have continued to decline.

Rainfed agriculture

18. Major objectives for development of rainfed agriculture in 1977 were to almost double the production of staple crops in the period till the end of this century and to make rainfed agriculture less vulnerable to drought (Club du Sahel, 1979). The principal strategies to be employed to achieve these objectives were:
 - cultivation of new land;
 - intensification of production in the zones presently under crop, without compromising the future, that is by both increasing peasant productivity and seeking a new ecosystem balance;
 - research and distribution of short-season food grain varieties likely to mature even in a shortened rainy season.

Each strategy will be briefly considered in the following paragraphs.

19. The colonization of new lands would alleviate the pressure on over-exploited zones and a considerable part of the cereal production targetted for the year 2000 would have to come from this form of extension of farmland. Migration to the new lands would have to be government supervised to avoid mismanagement of newly accessible resources.
20. A seminar on the "New lands" held in Ouagadougou in 1978 emphasized that the objectives of colonization of new lands would have to be compatible with those of securing the revenues of producers, self-sufficiency in food, safeguarding the basic equilibria found in the rural areas and the protection and improvement of the "ecological capital". Integrated rural development, benefitting both new and old farmers would be the frame within which actions would have to take place. At the same time it was recommended that efforts should be made to develop the areas of departure.

21. Settlement of new lands has been given less prominence in CILSS/Club du Sahel papers published since 1982 and it is not mentioned at all in the proposal for a regional desertification control strategy (CILSS/Club du Sahel, 1985). Other donor agencies, for example the World Bank, continue to emphasize the importance of the colonization of new lands as a means to reduce pressure on the densely populated Sahel-Sudan zones (World Bank, 1985).
22. By now it has become clear that large-scale ill-controlled colonization of new lands leads to unprecedented environmental destruction in some Sahel countries (for example in South-West Burkina Faso and East Senegal) and that controlled settlement of new lands requires considerable capital investment. A question which has not yet been adequately addressed in any document is what the effects have been of large-scale migration for the zones of departure. It is assumed to have mainly positive effects on the environment in that it relieves pressure on the available natural resources. However, one could also defend the thesis that depopulation takes away the incentive to intensify agriculture and reduces the local capacity to rehabilitate the environment.
23. The second pillar of the development strategy for rainfed agriculture was the intensification of production and in 1977 it was considered possible to increase the productivity of the land each year by 1% - 4% and the productivity of labour by 1%. The intensification of agricultural production could be attained through: (a) improvement of productivity (improved varieties, fertilizers, tillage, etc.); (b) organization and equipment of the production units (animal traction; association agriculture-livestock); (c) backward and forward linkages (input supply, marketing, credit facilities); and (d) the creation of producer organizations.
24. A review of rainfed agriculture in the Sahel carried out by CILSS/Club du Sahel in 1981 and 1982 shows that (a) the production of cereals does not follow - either in quantity or in quality - the growth of demand and cereal imports constantly increase to fill the gap; (b) rainfed agriculture remains vulnerable to erratic rainfall; (c) the productivity of farmers as well of the land stagnates at a low level. The review speaks of a double deadlock. First of all the actual system of cereal production will be less and less capable to feed the Sahel population and, secondly, even this mediocre result will lead to a serious degradation of the land resource base.
25. According to the assessment and perspectives for the development of rainfed agriculture in the Sahel (CILSS/Club du Sahel, 1983), the double deadlock can be broken by favoring the colonization of new land and through an intensification of the production system for rainfed agriculture. If intensification is possible, what is needed to make it work? It is stipulated that a new approach is needed, which has two basic elements: the first is the need for a better understanding of the rural population and the second is the creation of an environment favorable to projects. The question is whether this is really a new approach. The plea for a better understanding of farmers needs,

preferences and aspirations is new in the context of strategies to develop rainfed agriculture, but there is little new in the call for a set of coherent measures, which comprise the supply of agricultural inputs, access to credit, popularization of techniques, training of farmers, etc.

26. CILSS/Club du Sahel document (1984) "Thoughts on the question: what is to be done?" for the first time explicitly mentions the need to conserve water in the soil as a first step in drought and desertification control. In previous documents earth bunds have been mentioned as a means to reduce erosion, but the need for water conservation and water harvesting as a means to stabilize and improve yields in rainfed agriculture had not yet been recognized.
27. The third pillar of the 1977 strategy for development of rainfed agriculture is research and diffusion of short-season food grain varieties, which should reduce the drought vulnerability of rainfed crops. Later documents (CILSS/Club du Sahel, 1983) acknowledge that no progress has been made in this field. The 1984 document on "What is to be done?" states that there is a particular need to carry out basic research and development research to provide local groups with highly productive plant species and higher performance desertification control techniques.
28. During the period 1975-1985, rainfed agriculture received less than 9% of the total amount of aid, but if export crops such as cotton and groundnuts are excluded, aid to rainfed staple cereals did not exceed 4 % of total aid. Since 1980, aid to rainfed agriculture has increased far more slowly than the total amount of aid.

Irrigated agriculture

29. In 1976 the total size of the irrigated area in the Sahel countries was about 230,000 hectares out of which 150,000 hectares had only partial water control. The strategy for the development of irrigated agriculture defined in 1977 was based on rehabilitation and a better exploitation of the existing irrigation schemes as well as on the creation of new schemes. The target for the year 2000 was fixed at 600,000 hectares of new schemes out of which 100,000 hectares of controlled submersion of ricefields.
30. In a sectoral review of the irrigated sector made in 1979 it was observed that irrigated areas and production have increased only slowly, and that a substantial proportion of the irrigated perimeters built have deteriorated to a point at which they are no longer operational and must be rehabilitated. In an analysis of the situation at the start of the 1980's, CILSS and the Club du Sahel (1983) state that some progress has been achieved since 1980 such as reform of the parastatals responsible for managing irrigated perimeters, the rehabilitation of several irrigation projects and the launching of the Senegal river valley development project. The same document

stipulates that a substantial and increasing share of international aid has been devoted to these investments but it considers this share disproportionate to the results obtained up to now and disproportionate with regard to the true position of irrigation in the Sahelian economy. The document proposed that future cereal crop development contracts should have two separate sections, devoted respectively to rainfed and irrigated farming.

31. Between 1975 and 1985 approximately 12 % of the total amount of aid was allocated to irrigated agriculture, which is three times as much as to rainfed cereals.

Livestock

32. Before the drought of 1968 - 1973 the herds in the Sahel comprised about 20 million heads of cattle and 40 million sheep and goats. An estimated 25 % of the cattle and about 12 % of the small stock died during this drought period. The objectives fixed in 1979 for the development of the livestock sector are the following:

- increase livestock production to satisfy the growing internal demand;
- maintain the position of the Sahel on the export markets;
- improve the availability of draft animals;
- improve the income and quality of life of the producers.

The annual rate of increase of cattle production to be achieved to attain these objectives is fixed at 6 %, which means a doubling of the herds in less than 20 years accompanied also by a 50% increase in productivity. It is explicitly stated that overgrazing, leading to soil degradation, should be avoided (Club du Sahel, 1979:57,58). It is not specified how overgrazing can be avoided while doubling the herd size. The strategy elements to be employed to achieve the above-mentioned objectives are:

- an evaluation of the natural resources potentiel and the management of pastoral areas;
- the association of agriculture and livestock;
- improvement of animal health;
- increased training and communication;
- improvement of livestock marketing activities.

33. No mention is made in Club/CILSS livestock development strategy of stratification of livestock production, an idea strongly promoted during the United Nations Conference on Desertification held in Nairobi in 1977 (Transnational project on management of livestock and rangelands to combat desertification in the Sudano-sahelian regions). Young animals, for example, had to be raised by pastoralists in the drier areas and then sold to peasant-operated fattening and draft animal programmes in the Sudanian or Guinean region or to growing out ranches. Although stratification may take place spontaneously on a small scale, large-scale operations could never be initiated.
34. In 1983 the conclusion was reached that neither thinking at the national level nor the thinking of CILSS or the Club du Sahel have produced a straightforward and undisputed livestock development strategy. Action in favour of livestock development has been concentrated for a long time on animal health and pastoral hydraulics, and has contributed to some increase of extensive traditional livestock. Intensification operations, such as ranches, have failed. There is general agreement that an impasse has been reached: the limits to natural pasture resources put a ceiling on herd growth, but the number of meat and milk consumers will keep on rising. The livestock development projects designed since 1976 remain basically within the same frame as earlier actions (CILSS/Club du Sahel, 1983: 59,60).
35. In 1984 CILSS and the Club du Sahel created a "Working Group" to consider livestock development in the Sahel. This committee recommended an in-depth analysis of the evolution of the livestock sector, which should lead to proposals permitting the governments of the Sahel countries and the donor agencies to elaborate livestock development policies and programmes. A multidisciplinary team was fielded in 1985 and three country reports were published by CILSS/Club du Sahel in 1986 (Niger) and 1987 (Burkina Faso and Mali). The mission found, for instance, that increasing numbers of livestock are being held by agriculturalists and investors rather than by experienced pastoralists. Furthermore the mission argued that the development strategy of the livestock sector has always been based on animal health and pastoral hydraulics at the expense of management of forage resources. The impossibility to feed the animals correctly, in particular during the dry season, is considered to be the major constraint to increased livestock production. The intensification of agriculture is seen as the only way to produce more and better quality forage. This implies, according to the report, the use of chemical fertilizers as leguminous crops cannot be totally relied on to fix nitrogen.
36. The importance of pastoral nomadism is still considerable, but its survival is seen to depend on the possibilities of transhumance where it is still possible, the conservation of a minimum of dry-season rangelands and the rehabilitation of rangelands in the pastoral areas. On top of that social measures have to be taken in favor of pastoralists, who are forced to abandon their way of life (Pons, 1988).

37. Aid to livestock production during the period 1975-85 did not represent more than 2.5 % of the total amount of aid, but the level of aid has fallen from an average 38 million U.S. dollars in the period 1975-79 to only 12 million U.S. dollars in 1985 (Club du Sahel/CILSS, 1987:52,56).

Methodology

38. The preceding paragraphs mainly dealt with policy changes in the production sectors. The focus will now be shifted towards changes in approaches to development.

From participation to total voluntary commitment

39. In all CILSS/Club du Sahel reports on strategies for drought or desertification control the need for participation of the population in development activities is emphasized. In a reflection about the approach to development (Club du Sahel, 1979:130), it is stated explicitly that "these Sahelian peasants, pastoralists or artisans are the first to be affected by development. They know better than anyone what their real needs are and, in the final analysis, they will be the artisans of their own future ... After formulating their strategies, most sectorial teams have emphasized the extent to which the application of their strategies and the development of their projects would necessitate obtaining the active participation of the rural masses and, therefore, encouraging them to express their problems, their needs, their constraints, and guiding them to their true roles as artisans of their own development".
40. The 1984 Nouakchott Regional Seminar on Desertification arrived at the conclusion that the desired involvement of populations had remained episodic and sectoral. According to the seminar the word "participation" had become ambiguous and therefore it preferred to use "total voluntary commitment", which implies that people have the initiative and are responsible for their individual and collective programmes of desertification control. Voluntary total commitment means continuously incorporating such activities into their systems of production.
41. It is remarkable that no careful analysis is presented of the reasons why the involvement of populations had remained episodic and sectoral. Is it because participation tended to be interpreted as people contributing their labor to projects designed for them by technicians and experts ? Is there any reason to assume why technicians and experts will dramatically change their attitudes towards local knowledge and expertise ? Why would civil servants and technicians accept the delegation of responsibility for natural resource management to local groups ? In both the 1979 and the 1984 strategy it was recognized that the people themselves had to become the driving

force behind development. What is new is that the 1984 strategy for the first time makes total and voluntary participation a central theme and indicates how this could be obtained. Some of the measures mentioned are:

- security of tenure so that people can enjoy the fruits of their labor;
- training of population group leaders to manage and programme their organizations and activities;
- the activities initiated and carried out by population groups must help satisfy immediate needs.

42. The general trend with regard to participation of the local population in development is that it was considered important in the second half of the '70's, but the concept was not clearly defined and most projects continued on the same top-down formula. In a lot of cases only lip-service was paid to participation. In the beginning of the '80's a "no-nonsense approach" to development gained ground at the expense of participation. Only economic growth could lead to sustained satisfaction of basic needs. At present participation is on the rise again, which is partly a result of structural adjustment policies and economic difficulties with which the Sahel states are confronted. Total voluntary commitment is useful from the point of view of minimizing recurrent costs in order not to increase the already staggering debt burden of most Sahel countries. However, at the same time, it does reflect an increasing awareness that the style of development has to be changed if progress is to be made in the fight against desertification. Mass action should be pitted against large-scale desertification and a general involvement can only be obtained if low-cost, efficient packages can be identified, which can be implemented by the population with a minimum or without external support. In other words technical packages should be designed in such a way that they become replicable.

From a sectoral to a global approach

43. The Nouakchott Seminar (29 October - 4 November 1984) identified several major areas of inappropriateness of development policies in the Sahel. One of them was that activities had been conducted on a sectoral basis, had not been integrated into existing production systems, and had failed to take the ecosystems into account. The Seminar for that reason strongly advocated an overall (global) approach, which is multisectoral and aims simultaneously at production (satisfying needs) and the environment (which it is designed to preserve and rehabilitate). It should therefore be implemented as part of a programme, which is coherent, progressive and long-term.

44. This awareness of the need for an overall approach is not new. The Working Group created in 1976 by CILSS and the Club du Sahel to design a strategy and programme for drought control and development in the Sahel was also aware of it, as it made clear by the following quotation: "In any region, but especially in one like the Sahel where there is a delicate balance - amply demonstrated by the drought - any action undertaken has repercussions on the entire system and cannot be considered safely in isolation. It was indispensable, therefore, to be especially vigilant about the physical, economic and social equilibria of the Sahel and to show the same vigilance where the coherence of recommended actions is concerned".
45. Although there is a general call for a global approach rather than a sectoral approach, this should not lead to overly complex projects and programmes, which are difficult to manage and which propose overly complicated packages to resource users. Sequencing of activities and technologies may lead to more manageable projects and higher rates of adoption. Sequencing should in principle be based on priorities and preferences of the people.

The changing role of the state

46. At the end of the 1970's there still was a call for a reinforcement of national and regional structures responsible for project and programme implementation (Club du Sahel/CILSS, 1979:135). Due to poor project results, an increasing debt burden, and pressure from the IMF and donor agencies there now is a call for a reduction of state involvement, trimming of government agency staff and a growing role of private initiative and private enterprise. In other words, the State should act as facilitator rather than entrepreneur.
47. This new view of the role of the State has also influenced the perception of the role of the central government and its departments in desertification control. The Nouakchott Seminar proposed that the central governments, their institutions and departments and their development personnel assume three basic functions:
- (a) to assert their political commitment to desertification control and to mobilize their local population groups (giving them responsibility, helping them organize, etc.);
 - (b) to assist population groups and their organizations in their efforts (offering legislative, institutional, technical, material, economic, and, if necessary, financial assistance);
 - (c) to carry out national or regional programmes for which they are responsible, either to facilitate or to broaden the action of population groups (creation of infrastructure, research, etc.), or to carry out operations that exceed the competence and capabilities of local population groups (development of protected forests, solving urban energy problems, etc.) (Club du Sahel/CILSS, 1985:65).

DROUGHT AND DESERTIFICATION CONTROL STRATEGIES OF MAJOR DONOR AGENCIES

48. As already stated in par. 2 the objective of this section is not to analyze changes in drought and desertification control strategies of different donor agencies, but rather to identify, whenever possible, differences in accents and approaches within the donor community with regard to drought and desertification control.

The World Bank

49. The World Bank published in 1985 a policy paper on "Desertification in the Sahelian and Sudanian Zones of West Africa". This paper indicated the following elements of a desertification control strategy:

- the design approach should be holistic, based on probable instead of average outcomes, and based on popular participation;
- actions should be determined on the basis of the ratio of actual population to carrying capacity in any given area, although action programmes will have to be site-specific: people's interests, aspirations and readiness for collective action are not identical and the physical conditions, even in apparently homogeneous regions, are not uniform;
- research should be focussed on more drought resistant, high-yielding millet and sorghum and on more fast-growing, drought-resistant multipurpose tree/shrub/bush species;
- demand will have to be reduced, in general, by starting to reduce population growth rates; in the short term, demand for wood must be reduced by increasing permit fees;
- the policy environment can be improved; the main area for improvement is legal, where present land law does not sufficiently promote conservation.

50. The major difference between the Nouakchott strategy (1984) and the World Bank elements for a strategy (1985) concerns demographic policies. On most other points there is a considerable consensus between the World Bank and the Nouakchott strategy. Whereas the World Bank is convinced of the need to limit population growth rates in particular in areas where the population far exceeds the carrying capacity, the proposal for a regional desertification control strategy developed in Nouakchott (1984) rules out demographic policies based on desertification control issues. Instead, it recommends that land-use planning decisions and decision-making in every case should take account of the relationships between the ecosystem, production systems and population data (CILSS/Club du Sahel, 1985:13). It is further stated that the new socio-ecological balance will be achieved by gradually bringing these relationships into synch. This position is not very convincing and more a declaration of faith than a well

argued alternative to the World Bank point of view. The identification of a technical package, if it exists, that could substantially increase the carrying capacity of the areas with a high density population would have been a more adequate alternative.

51. The Nouakchott strategy proposes to make people the driving force behind development. The population groups are urged to organize themselves at each decision-making level. The Bank paper seems to go one step further. It states that regulations and laws concerning social organization should be examined to identify, and act upon, changes required to reduce the barriers to the setting up or recognition of genuine grass-roots organizations, empowered to make and enforce rules, and raise revenue for collective resource management.
52. Whereas the Nouakchott strategy raises the issue of recurrent costs, grants for specific desertification control activities and financing by 10 - 20 year indicative programming with firm financial commitments negotiated for each successive planning period, the World Bank paper raises the issue of price incentives which have to be moved even further in the direction of encouraging more intensive production techniques.

UNSO

53. In 1974 the United Nations Sahelian Office was formally established. The main functions of UNSO are: (a) to coordinate UN activities related to the rehabilitation of the Sahel; (b) to assist in finding support for projects identified by CILSS; and (c) to manage the UN Trust Fund for Sudano-Sahelian Activities. In 1978 UNSO was given the additional responsibility of implementing - together with the United Nations Environment Programme - the Plan of Action to Combat Desertification. UNSO's original functions concerned only CILSS member countries, but its anti-desertification responsibilities cover 21 sub-Saharan countries (MacDonald, 1986:40).
54. UNSO published in 1974 a document on "an approach to recovery and rehabilitation of the Sudano-Sahelian region", which seems to have strongly influenced the earlier papers of CILSS/Club du Sahel on drought control and development, as many of the ideas and concepts used in the various documents are strikingly similar. Some general considerations common to both medium-term and long-term programmes mentioned are: participation of the population, primary attention to the recovery and rehabilitation of the delicate balance between man and environment and the need for comprehensive and integrated programmes (UNSO, 1974:39-41). The document does not mention anywhere the "new lands", one of the main strategic lines of Club du Sahel/CILSS a few years later. Nor does it say anything about forestry. Pastoralism, however, was given a prominent place in the document and it was suggested to permit and perhaps even to encourage those of the nomadic population who so desire to rebuild their

traditional existence in the semi-arid zone. Resettlement in areas of greater rainfall was seen as an option for only a relatively limited number of pastoralists over a considerable spread of time (UNSO, 1974:50/51).

55. It should be borne in mind that UNSO concentrates on feasibility studies, planning and programming missions, and pilot projects, all the while looking for other donors to take over the financing of the main project (MacDonald, 1986:41).

IFAD

56. In 1985 IFAD launched a Special Programme for Sub-Saharan Countries Affected by Drought and Desertification. This Special Programme comprises the following major elements:
 - (a) rehabilitation, recovery and capacity utilization;
 - (b) development of rural staple food crops and related research and extension activities;
 - (c) small-scale water control schemes;
 - (d) agro-forestry and environmental rehabilitation;
 - (e) institutional support and policy reorientation.
57. IFAD's view is that local people themselves are constantly developing intelligent land-use practices as they attempt to overcome emerging constraints. The efforts of the Special Programme would aim at making incremental improvements in existing land-use systems. Technical packages must therefore be compatible with the local culture and have a low technical complexity. Farmers organizations should be used as a format within which problems can be specified, and the farmers themselves can rank their priorities, set goals, identify options, allocate responsibilities and provide the required feedback (IFAD, 1985)
58. Especially since 1986 IFAD has made a substantial effort to identify soil and water conservation, water harvesting and agroforestry programmes for several Sahel countries, for instance Mali, Niger and Burkina Faso. An important objective of the soil and water conservation/agroforestry programmes in Burkina Faso and Niger, which have recently been started up, is to introduce simple, replicable techniques and to maximize farmer participation in soil and water conservation.
59. In October 1988 IFAD organized an "International Consultation on Environment, Sustainable Development and the Role of the Small Farmers", because it is concerned about the environmental impact of

its projects and IFAD intends to sharpen its focus on smallholder agricultural production that can be environmentally sustained (IFAD, 1988:v).

FAO

60. FAO does not have a specific desertification control policy for the Sahel, and its activities in this field have been rather dispersed. This is mainly due to the fact that FAO works for other donor agencies and supports governments to implement their own policies. According to FAO attempts to control desertification must address the social and economic causes as well as its physical symptoms. It is emphasized that a multisectoral approach is needed to conserve and exploit the full potential of Africa's land and water resources. In FAO's view, governments should also accept that they are not able to operate large numbers of small-scale schemes, and that farmers will have to manage such schemes themselves.
61. The Forestry Department, the Land and Water Development Division and the Inter-Departmental Working Group on Environment and Energy have collected a wealth of information and gained considerable experience with regard to elements of desertification control, such as forestry, soil and water conservation, sand dune fixation, rangeland management, desertification assessment, environmental monitoring and land use planning.
62. In the field of forestry/ecology, FAO emphasizes among others the following aspects:
 - the need to involve women in forestry and the management of forest resources;
 - the management of natural forests by the population;
 - the integration of forestry planning into national planning, which has in the past often been neglected;
 - the importance of what often used to be called "minor forest products", such as gums, raisins and tans;
 - the need to create small-scale forest based enterprises.
63. The Soil Resources Management and Conservation Service is at present developing "a Soil Conservation Strategy for Africa". Although the details are not yet known, FAO recognizes that many conservation projects in Africa have been top-down, expensive, non-replicable and only exceptionnally produced tangible benefits for the farmers. Given the range of environmental conditions, cultures, economies and traditions, FAO is in favor of developing national soil conservation strategies.

EEC

64. In response to Africa's crisis EEC prepared in 1985 a Plan for Rehabilitation and Revival to help the African countries worst hit by drought to rehabilitate their agriculture (the Dublin Plan). At the request of the European Council the Commission came up with an anti-desertification plan in 1986. This plan attributes the lack of success so far in the fight against desertification to an insufficient number of actions which were too small in size and too dispersed to make an impact. The desertification process can, according to the Commission, be reversed only through broad-based actions of a minimum critical mass (200,000 ha. for watershed management and 30,000 to 50,000 ha. for afforestation projects). The key words of EEC strategy are: concentration of means in the priority sectors, coordination of the activities of aid organizations and governments concerned to achieve coherence of action. Watershed management of the North and East faces of the Fouta Djallon and satisfying the domestic and artisanal energy needs of major African cities using fossil fuels rather than wood or charcoal are two large-scale programmes in preparation.
65. The large-scale approach advocated by the Commission is a deviation from recent trends towards smaller-scale desertification control and development activities managed as much as possible by the local population.

The United States of America

66. In April 1976 AID submitted a Proposal for a Long-Term Comprehensive Development Program for the Sahel to the United States Congress. According to this report both donors and recipients in the Sahel relief program had come to accept two basic propositions concerning the future of the region: (1) without a fundamental alteration in their systems of production, the people of the Sahel, just to survive, will require even greater quantities of international donations and (2) given the great underutilized resources of the region, both in the potential for increased productivity of dry land farming and in the long-term development of the major river basins of the Senegal, the Niger and the Volta River systems, and of Lake Chad, such a transformation of the area's productive capacities is indeed possible - provided that adequate infusions of international development assistance are forthcoming (USAID, 1976:6/7). During the first five-year period (1976-1980) AID recommended that emphasis be placed on food crops and livestock, on rural health and on training related to key tasks (USAID, 1976:23). According to AID the application of the resources and technology now available to crop production, protection and storage would in the near-term improve the lot of rural families.
67. The assessment of the Sahel Development Program in 1983 drew attention among other problems to the inadequacy of the technical production packages for low rainfall zones and the inadequacy of forestry and

environment programs. As a result the Sahel Development Program was revised to reflect its current priorities: agricultural research and production, economic policy reform (38% of SDP 1986 expenditure), health and family planning, human resource development, infrastructure and environmental restoration and conservation (USAID, 1987:17).

68. From the American viewpoint agricultural improvement (including soil and water conservation) and population programs lead the array of desertification control activities. AID recently launched a Natural Resources Management Support Project (NRMS), the main goal of which is to improve policies and programs to restore and maintain environmental stability and the natural resources base in sub-Saharan Africa, especially in support of agriculture. Strong support for farmer-oriented participatory approaches, including those which facilitate the involvement of women, is seen as the key to the full and long-term realization of the potential for natural resources management and development (USAID, 1987b:8).

Canada

69. The creation of a new socio-ecological balance is the main goal of the CIDA programme in the Sahel. The programme is focussed on three priority themes and a number of supporting activities:

- (1) restoration of the food balance (including crop protection, extension support to storage and marketing);
- (2) stabilization of the vegetation cover (SWC, afforestation, improved stoves and training);
- (3) development of energy sources (including a large dam for electricity generation and wind energy).

70. Some guiding principles of CIDA's program are: a bottom-up approach realised through micro development projects and village land use planning, a long-term perspective, geographical concentration, development of human resources and a reduction of recurrent costs.

71. According to CIDA (1986:10) experiences over the last 20 years show that development projects defined and carried out without the active participation of the local people rarely produce the expected results and developing rural commons is therefore an important focus of Canada's strategy. It implies that development projects are defined, established and implemented by and for local populations and people play the deciding role in the search for a better balance between themselves and their environment (CIDA, 1986:10). Particular attention is given to integrating women into the process of change.

72. CIDA's Environment and Development Implementation Strategy should ensure that the environmental dimension is taken fully into account at

the earliest possible stage of policy planning and decision making (CIDA, 1987). All new bilateral assistance projects are screened to ensure that the potential effects on the environment of development initiatives undertaken or supported by Canada are considered and addressed appropriately.

The Netherlands

73. According to the Regional Policy Plan for the Sahel (1986:6), the problem for the Sahel countries is not simply to overcome the effects of drought, and seek protection against its consequences in the future, but also, and indeed primarily to find a new balance between a growing population in the areas in question and the limited natural resources, which should be developed more efficiently. The current Dutch cooperation programme concentrates on three sectors:
 - (1) promoting food production;
 - (2) improving water supplies;
 - (3) activities aimed at the preservation of the ecological balance.
74. Of the funds spent on agricultural development about 70% were used in the irrigated sector and only 20% in the dry farming sector. The main reason for the low percentage spent on the development of dry farming, is said to be the difficulty to identify and formulate meaningful activities in this sector (Regional Policy Plan for the Sahel, 1986:10).
75. In the field of ecology/forestry plans were still drawn up in 1986 to make the idea of "village woods" more widely applicable (Regional Policy plan for the Sahel, 1986:16). This is quite remarkable as other agencies had already abandoned or were in the process of abandoning the support to village woodlots.
76. A new Regional Policy Plan for the Sahel has recently been formulated (July 1988). Major differences from the 1986 Regional Policy Plan are:
 - in the forestry/ecology sector emphasis changes from village woodlots to a combination of family and individual plantations, agroforestry, improved stoves and decentralized management of existing natural forests;
 - a shift from desertification control to the development of sustainable land use practices; it is recognized that the improvement of agricultural production systems can make an important contribution to the rehabilitation of the environment;
 - a more important accent on population policies as part of a broader socio-economic development policy;

- the explicit recognition of the importance of cultural aspects in development activities.
77. The starting point in the Dutch-funded village land use planning activities in Burkina Faso is how the villagers themselves define their territory. Decentralized natural resource management by local organizations has become a key aspect of Dutch policy.

Federal Republic of Germany

78. The German strategy for desertification control is similar to the CILSS strategy. CILSS regional strategy reflects to a large extent the experience gained by the German Programme for the Sahel/CILSS (PACILSS), which was initiated in 1980. The first phase of this programme (1980-1984) was mainly dedicated to studies, tests and pilot desertification control projects. In its second phase (1984 - 1988) the emphasis shifted more to providing stronger support to CILSS in particular for the formulation and operationalization of desertification control strategies as well as the identification and preparation of new desertification control projects.
79. PACILSS has made a considerable effort to develop technologies and approaches for desertification control (soil and water conservation, gully control, village land use management, pasture regeneration, etc.) as well as to diffuse the knowledge gained. According to the BMZ/GTZ a lot of technology is now available for desertification control. This view, which is not shared by a recent World Bank report (Gorse, a.o., 1987) is also based on the numerous examples of successful local-level desertification control activities in the Sahel analyzed in an important study commissioned by PACILSS (Rochette a.o., 1988).
80. The German CILSS Programme strongly supports efforts to test projects with a global approach to desertification control, such as the Programme Global Sahel Burkinabé, the Programme Global Niamey-Nord in Niger and the Programme Global Ansongo-Menaka in Mali. A village land use management project has recently been initiated in Burkina Faso.
81. BMZ/GTZ attaches particular importance to problem awareness raising, training at the practical level, voluntary local participation and the role of women in development. BMZ/GTZ and the Club du Sahel co-funded a study on the role of women in the fight against desertification (Monimart, 1988).
82. Whereas the World Bank for various reasons (failures of integrated multisectoral projects, a bigger emphasis on national agricultural research programmes and on institution-building) seems to shift away from integrated rural development, BMZ/GTZ is presently increasing its emphasis on rural regional development. Although it is not possible in this context to do justice to the complexity of the concept of rural regional development, its major characteristics are:

it is people-oriented, location-specific and multisectorial. The success of this type of rural regional development is not determined by an increase in production, but rather by the long-term sustainability of production systems. Its conceptual basis is not what is technically feasible, but rather what is within the capacity of the local population.

Italy

83. In 1982 Italy made \$ 500 million U.S. available for what was called "Initiative for the Sahel". Rural development, health, village water supply and infrastructure are priority areas for the Italian Cooperation.
84. The concept of "integrated rural development" is an important feature of Italian cooperation with the Sahel. Integrated rural development projects have the following major characteristics: (a) the project document only details activities for the first year and, taking into account the available financial envelop, limits itself to indicating general development orientations for the following years; in this way it is possible to reduce the period between project identification and the start of the implementation to about one year; (b) a flexible approach, which means that each year activities are defined only for the next year; this approach permits periodic adjustment of the programmes to the reactions and demands of the rural population; (c) the interventions are concentrated in a well-defined region; (d) project structures are designed in such a way that they can easily disappear or be absorbed at the end of the project by the government structures; they are meant to support development and not direct it.
85. Several major integrated rural development projects funded by the Italian Cooperation have important environmental components. In Niger, the Programme de Développement Rural Intégré de l'Ader Douthi Maggia (PDRI/Keita) has a major accent on soil and water conservation, water harvesting and tree planting. The Programme Intégré de Réhabilitation du Damergou (PIRD) is testing tied ridges and other water conservation techniques constructed by machinery designed for this project. In order to reduce costs of afforestation PIRD is testing direct seeding of local tree species. Both projects mentioned illustrate a readiness to adapt and to innovate and they demonstrate the technical feasibility of restoring the productive capacity of degraded areas. Integrated rural development projects are also under implementation in Burkina Faso (Koupela region) and in Senegal (Casamance region).

Switzerland

86. The Direction de la Coopération au Développement et de l'Aide Humanitaire (DDA) gives a high priority to projects in the ecology/forestry sector. An estimated 25 % of the annual aid budget is

spent on activities in this sector, which reflects the importance attached by the Swiss to natural resources management in the Sahel.

87. In this budget a variety of environmental activities are funded. They include:

- forestry projects in Burkina Faso, Mali and Niger ;
- support to African NGO's like the FONGS (Senegal), 6S (Burkina Faso), INADES, IPD, CESAO and ENDA;
- support to international NGO's like IUCN and the World Wildlife Fund (Conservation and natural resources management in the Aïr and Ténéré/Niger);
- applied soil and water conservation research in Niger.

88. The Swiss strongly emphasize the importance of training at all levels ranging from adult literacy programmes and local language newspapers to the training of forestry engineers and hydrologists. About half of the 70 projects funded in West Africa are training projects or projects with an important training component and a considerable share of these projects are directly relevant to natural resources management.

89. The forestry projects in Burkina Faso and Mali are implemented by Intercoopération, a Swiss NGO. Both projects are evolving from village forestry projects to village land use management projects. The project in Mali is making a systematic effort to change the role of forestry agents from one closely associated with control and sanctions into one associated with a development agent (animation and training).

90. In the field of village land use planning a distinction is made between a technocratic approach and a participatory approach. The former implies that technicians determine the course of action, and in the latter the priorities of the local population prevail. The Swiss attach a high importance to the participatory approach.

France

91. During the 1968-'73 drought a lot of trees died and the reaction of the French foresters was to propose major tree plantations using exotic species, because it was implicitly assumed that local species would regenerate naturally. The results of these projects were disappointing and since the beginning of the 1980's French aid is shifting its assistance towards farm forestry. Since 1985/1986 FAC, in close collaboration with CCCE and the World Bank, is focusing its efforts on natural resources management projects. These natural resources management projects usually have the following components: rural water supply, agricultural development, livestock development, tree planting and village land use planning.

92. In 1986 proposals for a desertification control strategy were formulated by the French desertification control unit based in Niamey.

According to this strategy the approach to development should be global (multidisciplinary and multisectorial), integrated (actions defined and realised for and by the population), motivating (people should directly benefit from their work) and systematic (coherence in the spatial distribution of the projects). Two lines of action are proposed: individual action at the level of farmers' fields to modify production systems at the village level and communal action to tackle the problems of natural resources management at the inter-village level.

93. Integrated development; farmers as partners, rather than target groups which have to be reached; support to existing dynamics in local communities; location-specific activities instead of a blue-print approach; simple techniques which can be mastered by the population are all elements of the French approach to rural development in general and to desertification control in particular.

The International Union for the Conservation of Nature and Natural Resources

94. IUCN published in 1986 a long-term strategy for environmental rehabilitation of the Sahel. The main objectives of the strategy are:

- to improve the livelihood, security, and the quality of life in arid and semi-arid parts of Africa, particularly the entire Sudanian-Sahelian zone;
- to restore or enhance environmental productivity, or arrest its decline;
- to maximize the sustainable use and better long-term management of living natural resources (IUCN, 1986:45).

Some elements of the proposed strategy are:

- use existing production systems as a basis;
- use and develop where possible traditional common property resources management and production systems;
- assist in the design of new types of rural institutions for sustainable land use;
- diversify natural resources use;
- explore traditional rural scientific knowledge about environmental use and agricultural and pastoral production as a basis for new, environmentally sustainable production strategies jointly elaborated by researchers and villagers or nomads themselves (IUCN, 1986:45-49).

95. IUCN strategy also emphasizes that many of the constraints to sustainable use of the environment are external to local communities in which ecodevelopment projects will be situated. IUCN therefore pleads for promoting new styles of development at the national and international levels.

SOME GENERAL REMARKS AND CONCLUSIONS

96. Most of the drought control and development strategies formulated in the 1970's were based on unrealistic assumptions about the potentials that could still be exploited. Within a decade optimism has faded and projected growth rates for the different production sectors have been scaled down considerably.
97. It is evident that there is a considerable consensus about what to do to control desertification, but despite all the efforts the process of desertification has not been reversed. The question seems not what to do, but rather how to do it and who should do it. In this respect the recent efforts to describe and analyze successful local-level desertification control programs and natural resources management initiatives (PACILSS/Club du Sahel, USAID, World Bank) demonstrate that a lot of technology is already available.
98. Almost all donor agencies and also the Sahel governments recognize the need to transfer responsibility for desertification control activities to groups of resource users. Most agencies agree that the population should be involved in the design and implementation of new programs, that local perceptions and priorities should be taken into account, that projects should be built on local environmental knowledge, that the blueprint approach to development should be abandoned, etc. However, experience shows that these policy intentions are difficult to put into practice, partly because the attitudes of national and expatriate staff towards the local population take time to change, partly because local institution-building for resources management is a slow process, which does not quickly produce tangible results, tempting agencies to introduce shortcuts. A fundamental question is whether Sahel governments are ready and willing to empower groups to manage their resources?
99. All governments and donor agencies repeatedly stress the need for better coordination of desertification control activities and, given the considerable consensus among donor agencies, one would assume that this would facilitate effective coordination. But where and in which cases has discernable progress been made? What are the major obstacles to donor coordination and how can these be removed?
100. Looking at the amount and the relative decline of aid commitments for the ecology/forestry sector and for rainfed agriculture during the period 1975 - 1985, an impartial observer might be tempted to question the real willingness of aid agencies to commit themselves to

desertification control. How can the relative decline in aid funds for these sectors be explained ? Is the commitment mainly verbal or is the low and decreasing part of the aid budget allocated to these sectors an indication of " we don't know what works and we can't find meaningful activities to finance ?"

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