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## **PASTORAL DEVELOPMENT NETWORK**

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A COOPERATIVE DEVELOPMENT EXPERIMENT  
AMONG NOMADIC HERDERS IN NIGER

by

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1. Development among nomadic herders in dry West Africa has been an unsuccessful undertaking. Many governments and bilateral and multilateral agencies have failed to improve things, or have made them worse. There is now a feeling among some donors and governments that the problems are too great and returns too low, and that scarce development resources should be redirected to projects offering a better chance of success and of higher rates of return.
  
2. There are several related reasons for these failures, which should be analysed for the lessons they contain. We are concerned here with two main causes of failure of Sahelian livestock projects: first, the way pastoral development problems are defined, and what gets defined as a problem; second, the lack of an appropriate institutional framework for pastoral development.

#### Definition of problems

3. Problems have been defined mainly in technical terms, with a focus on animals and the grazing environment, rather than on herders. Major themes in recent projects include animal disease, grazing management, inputs such as dry season feed supplements, improved salt licks, or genetic improvement. Livestock problems have largely been defined by Western, or local but Western-trained technicians in livestock ministries, and the considerable body of knowledge accumulated by anthropologists and geographers on the functioning of West African pastoral societies has yet to find a substantial place in problem definition and project design. This is at least partly the fault of many social scientists whose interests and professional reward systems are not yet geared, in the livestock field, to a realistic appraisal of government policy options, or to project design. This failure of social scientists to make a major

contribution to policy formulation and project identification

in the livestock sector has led to sectoral policies and projects overly concerned with carrying capacity, or the possibility of pasture reserves, and with unfeasible (often technically incorrect) interventions. We have to recognise also that range and animal science is still very inexact: not only are the promised results often unachievable, but they would often be counter-productive if achieved. This approach has systematically ignored the herdsmen's own considerable technical knowledge, their understanding of what is possible in their environment, and their own clearly articulated and consistent production objectives.

4. As a result of recent experience, many Sahelian herders are now very sceptical of development proposals: for them development has too often meant land expropriated for state or private ranches, the channeling of additional resources to those people within the community who are already rich and powerful, and silly technical interventions. Herders resist these things in the only way open to them, through non-cooperation.
  
5. The concentration on technical solutions has meant that major trends and constraints in the pastoral economy are often not defined as problems at all. The rapidly developing economic and political stratification, both between towns and the marginal pastoral areas, and within pastoral areas themselves, is rarely identified as a problem. Throughout the Sahel there is increasing concentration of ownership and access to animal capital, to water supplies and thus to rangeland, but these trends are rarely reported in project documents. Since the 1973 drought, there has been an increasing process of proletarianisation in the countryside, which has particularly affected herders, who are in many places being transformed from independent rural producers, into cowboys herding other peoples' animals on land they no

longer control.

6. However, the lack of consultation with herders about problem definition does not mean that herders have not been asked their opinion. Since the 1973 drought there are relatively few herding groups in the Sahel whose leaders and some members have not at some stage been asked by government officials, by outside consultants or by visiting anthropologists, about their priorities. In the herders' opinion these forms of consultation have had few concrete results; the outsiders simply go ahead with their own technical ideas, whatever the herders may answer to the questions put to them. As a result, current Sahelian development projects in the pastoral sector, and even the agencies themselves, lack credibility among herders, and new initiatives are now treated with suspicion.

#### Lack of development institutions

7. The second main cause of failure of recent projects is the lack of appropriate development institutions. Inadequate definition of pastoral problems has been compounded by a lack of structures and institutions to make development possible, even if problems were correctly diagnosed.
8. Without an appropriate institutional framework, there are no channels for government on the one hand, and herders as a group on the other, to communicate with each other about development. There can thus be no dialogue, and no participation of herders in formulation of policies and projects. There is no effective demand for improved services, since herders deal as individuals with the powerful bureaucratic machinery of the state, which has more incentive to respond to its own internal logic and the demands transmitted from higher up. Occasional attempts at training

primary health care workers for people or for animals have

largely failed because such people are isolated within their community, and are rapidly seen as a low cost extension of the government bureaucracy. Without an institutional framework, natural resource management is impossible. Programmes involving economic cooperation between pastoral households, such as group credit, are difficult, and important economies of scale, for example in group cereal purchases for dry season use, are impossible.

9. Existing institutional frameworks of the pastoral zone are -inadequate for development tasks in most cases in the Sahe There is no equivalent of the village structure, with its own traditional decision-making, dispute-settling and resource-managing institutions, which has been identified as a potential development framework In many African countries. The lineage and status group structure of most Sahelian pastoral societies is in most cases neither appropriate nor effective for this purpose. There are substantial differences between and within ethnic groups in the way these structures operate, ranging from some very hierarchical Twareg to very egalitarian WoDaaBe. Traditional social and political units are of widely varying sizes; traditional chiefs have varying powers; there is little economic and social homogeneity; and in most cases different levels in the hierarchy do not share a common development interest. In most cases the traditional social and political structure was severely shaken at colonial conquest and during the period of colonial administration, and since independence Sahelian governments have denied it any legitimacy, especially for resource management. Administrative powers devolved by the state to traditional chiefs have varied widely and have changed often. Sahelian governments have occasionally tried to reinstate some of what are claimed to be the traditional powers of tribal chiefs, but these attempts are not realistic; where it still exists, the traditional tribal

structure is often now little more than a vehicle for rapid economic and political stratification.

10. The alternative framework for the administration of development in Sahelian pastoral areas is a "point of contact" model whereby the government dispenses services at wells, markets, or State-run service points (veterinary clinics, health dispensaries, controlled cereal sales points) on a first-come-first-served basis. This has proved unsatisfactory as a framework for development among nomadic herders. Pastoralists at such points of contact are not a stable identifiable population, but rather a highly varying group: such points tend to be frequented more by rich than by poor people, and rarely by women; herders at such points of contact are unable to act together as a group or to articulate group interests,
  
11. However the failure of development programmes to identify a traditional structure appropriate for modern development among Sahelian pastoralists does not mean that herders in the bush do not cooperate. They do cooperate for many essential tasks, especially management of herds, water and pasture, some cooperative labour enterprises, and some marketing. Informal cooperative units of this sort are well adapted to the pastoral environment because of their small size and flexibility. It seems likely that such functional units, built up and reinforced, could provide the nucleus of an institutional framework able to perform the development tasks listed above.

The Niger Range and Livestock project herder's associations

12. It was with this idea that the Niger Range and Livestock (NRL) project, implemented by the Ministry of Rural Development, and funded by the Niger government and IJSAID, approached the problem of pastoral development in central Niger between 1979 and 1983. The project objectives were to conduct research and pilot interventions and, on the basis of the findings, to design a major livestock development project. The project area, about 81,500 km<sup>2</sup> of Sahelian grassland, is situated between the 100 and 350 mm isohyets in central Niger (figure 1). Its main inhabitants are Tware and WoDaaBe nomadic herders; pastoral FulBe and Tamasheq-speaking agropastoralists are a second major group; sedentary Hawsa farmers cultivate especially in the extreme south of the zone; and there is a small Arabic-speaking herding population in the north-west. Project air surveys, administrative census and ground surveys suggest a dry season population of around 219,000 people, including 111,000 Twareg and Arab herders, 43,000 WoDaafle/Fulme herders, 63,000 Twareg agropastoralists, and an unknown number of Hawsa farmers. An estimated 130,000 people in the zone are pure pastoralists, practising no agriculture. Project air surveys and livestock service records estimate the area to contain between 289,000 and 377,000 cattle, between 780,000 and 1.1 million sheep and goats, and between 70,000 and 156,000 camels depending on the season.

13. The first two years of the project were mainly devoted to

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possible to build on these initial programmes, encouraging both herders and the project team to acquire experience of cooperation which would make the more controversial programmes that might eventually be recommended (such as range management) more feasible. Such an approach also gave time to the range management team on the project to develop feasible proposals for raising the productivity of rangelands.

14. To accomplish these goals, the NRL project team fixed on small scale herders' associations as the major development -Institution. By the end of the project at the end of 198 10 such associations, including both Twareg and WoDaaBe herders around Abalak in the Tahoua Department, were functioning well, and the development of the association programme was the major thrust of the five year follow-up project. The following paragraphs describe the main association programmes.<sup>2</sup>

#### Constitution of associations and office holders

15. An association is made up of between 15 and 30 families, that is about 100-200 persons. A group of less than 15 families might contain only members of one extended family, while a group of over 30 families would be too large, given the dispersal and mobility of Niger pastoralists, for common decision-making all year. The solution was an association which corresponds to cohesive traditional social units, situated somewhere between, on one hand, the extended fami,.i and the camp, and on the other, the migratory group and lineage segment. These are the units which do in fact cooperate in the daily activities and decisions of pastoral life. In the choice of members, there are thus two main criteria: kinship relations and geographic proximity. The members of an association are usually kin, who normally have

close pastoral and economic relationships, and who live together in the same dry season area, such as a valley or around the same well, and use the area's natural resources in common.

16. The members of an association are individual nuclear families or household production units. Membership is voluntary and is open to any family with the unanimous consent of the group's members. A member can leave the association at any time, after returning any goods, money or animals borrowed.
17. The members of each association elect office-holders. The term of office is two years, and no person can hold a post for more than three consecutive terms. Office-holders receive no salary for their association activities. The principle behind association offices is one of power-sharing. The idea is to fight against monopolisation of the life of the association by an individual or by a single family.
18. These are the main positions in an association:
  - a) the president. He supervises the functioning of the association, ensuring that it conforms to the internal regulations. He speaks for the members of the association, and is an intermediary between the association and the local administrative and technical authorities. The president does not handle any money, but he controls the activities of the section heads.
  - b) section heads. They are managers of the association credit programme, who organise the activities of their sections, handle money and take decisions, under the general supervision of the president.

- c) technical advisors. They are trained by the relevant government service and by the NRL project, in fields such as human health, animal production and health, literacy, pasture management, well construction, maintenance and management, and crafts. They provide members of the association with information, technical skills and commodities such as human and veterinary medicines . They are also intermediaries between herders and government services, increasing the flow of information and feedback in both directions.

Association credit programmes

19. NRP project research (Swift ed. 1984: 225-530; White 1984), and the herders themselves, identified lack of animal and other capital as a serious constraint to the development of pastoral production in the project area. A credit programme targeted at particular identified needs seemed the appropriate response, and the association structure provided the framework within which it was possible to plan a group credit scheme for nomadic herders. There was no other source of credit for the great majority of poor herders, although the need for additional animal capital is shown by the increasing number of production units which are "share-herding" animals entrusted by non-pastoral owners on very disadvantageous terms for the herders. In the longer run, the credit programme is seen as the first step towards the development of a set of new financial institutions in the pastoral zone which will mobilise rural and other savings, and pastoral zone financial flows generally, more effectively for pastoral development than at present.
20. From the beginning of its life, an association is allocated a revolving credit fund to encourage productive activities and to increase its own capacity for sustained economic growth. The activities to be financed are those identified by the

herders and by the project as having priority in resolving constraints on pastoral production. The credit programme is also intended to built up herders' confidence in the willingness and ability of the project to perform as an effective partner for development, and provides experience for association memberm in group decision-making about new activities, record keeping and accounting.

21. The revolving fund of each association is about 6,000 Us dollars, for an association of about 20 families. This fund is divided into several small sums, or sections, according to the activities the members of the association decide to undertake. No section can use more than 50 percent of the revolving fund. In this way, the sums involved are quantities the herders are used to handling. The revolving fund is a loan, not a grant. It ham to be paid back after 4-6 years, with interest calculated at a rate designed to cover administrative and financial charges. Income for repayment comes from profit from the activities of each section and from the membership dues.<sup>3</sup>

22. Each association ham a range of activities it may undertake with its revolving funds. Herders themselves vote at their association's general meeting held every two years, on what activities among those approved by the project should be undertaken and what proportion of the revolving fund each activity should receive, subject to the 50 percent limit. The activities chosen and the proportion of the revolving fund allocated to each vary from association to association, depending on how members prioritise their problems. The most important activities the first ten associations decided to undertake were as follows:

(a) Cow-calf herd

23. Many herding families do not have herds large enough to meet

their subsistence needs. Death and sales of animals in the drought of the early 1970s started this process; since then many herders have not been able to restore their herds to pre-drought levels. Poor families have been forced into alternatives outside the pastoral system (migrant labour, for example), or within the pastoral system ("share-herding" of animals which belong to non-herders, such as merchants, farmers or civil servants). The herders' association cow-calf or reproductive female scheme is intended to provide association members with a minimum of working capital by building up herds in herder ownership to a reasonable subsistence level. It also increases milk available for household consumption, and provides the association with a cash return when the females are sold.

24. Rebuilding a minimum herd for member families of the associations is expected to reduce the need for migrant labour by herders to Nigeria and the West African coast. This migration takes place in the dry season and adds to the severity of the dry season labour constraint. By reducing migrant labour in this season, the herd reconstitution programme run by associations will make more labour available in the herding economy at the time when it is a critically scarce resource. Another goal is to raise the general level of herd productivity to that of herder-owned and managed herds from the lower level of productivity in herds where the presence of a significant number of entrusted animals often means that the herder cannot or is not encouraged to manage his herd in the traditional labour-intensive way.
25. To carry out the programme of this section, the section head buys female animals (cows, camels, sheep or goats, according to the association) at market. These animals belong to the association, and are loaned to the poorest members according to the principle of traditional loans: the offspring belongs to the borrower. After the female has given birth twice, the

animal is loaned to another member or sold,

(b) Growing-out herd

26. Poor households are now obliged to sell very young animals at low prices and at bad times of year in order to buy cereals and other essential goods; most animals are sold at one or two years of age, well before the optimal age for sale (Swift ed. 1984: 298-405; White 1984). In this situation, the herders carry the full risk-of mortality during the first year (25-35 percent for cattle), but cannot take advantage of the rapidly increasing value of their animals in the following three or four years, when mortality risk is much lower, probably around 5 percent, and labour and other costs of herding are low.
  
27. The objective of the growing-out programme is to ensure a more equitable distribution of the value added in pastoral zone rangelands by allowing the herders who have carried the full risk of the first year to capture a larger share of the value of the growth of their animals over the following three or four years. The growing out programme will also contribute to a rationalised policy of national stratification of livestock production: male cattle complete the rapid growth of their first few years in the pastoral zone, which is best suited to this, since growing out is impossible in the agricultural zone and the government ranches have limited capacity. The programme will also contribute to a better overall balance between animals and pasture in the pastoral zone, since most grown-out animals are sold at the end of the pasture-surplus rainy season, allowing considerable destocking each year before the pasture-deficit hot season. The programme will not increase the total number of animals in the pastoral zone, because animals are either bought directly from association members or at local markets, and are thus transfers of ownership to

herders from the non-herders who would otherwise buy them an investment.

28. To carry out this programme, the section head responsible for growing-out buys young male animals, which belong to the association, but are distributed for herding among the members. The animals are kept for periods ranging from a few months to one or two years. When they are sold, the money is used to repay the revolving fund and a part is also distributed between the members.

(c) Short-term credit

29. One major problem in pastoral production is the vulnerability of herders to market price fluctuations for livestock. Herders sometimes take an animal to a distant market or to a series of markets, but are offered low prices because few traders are there that week. The herder may nevertheless have to sell in order to buy cereals or other essential goods.
30. The short-term credit programme provides small loans to association members. This gives the herder the chance of delaying sale for up to about a month in the expectation of a better price for his animal, but to buy the cereals or animal production inputs he needs all the same. Another use of this programme is in connection with the associations' crafts programme: short-term credit enables women to buy the raw materials for artisan products such as palm fibres to make mats, or leather and ink to make leather goods.
31. The money allocated to this section is managed by the section head. Loans can normally be no less than 5,000 FCFA (16-17 US dollars) and no more than 15,000 FCFA (45 dollars). Loans are repaid within a period decided by all the members of the association (between three and five weeks): rapidly

increasing interest rates are charged on loans over this period. The rapid turnover of short-term credit funds and the calculation of interest payments provides excellent training in book-keeping for association members.

(d) Cereal fund

32. Although herders meet part of their food needs by drinking milk from their herds, for most of the year they have to buy food from outside the pastoral economy, and during the dry season all herding families eat mainly millet. Poor herders especially depend on millet, since they have fewer animals and less milk. Terms of trade move against herders in the dry season, since cereals prices are high then and animal prices are low,
33. The cereal fund is a seasonal loan which enables the association to buy cereals in bulk when prices are low, store them under members' control and sell them to members when they are most needed. It enables herders to plan animal sales and sell when prices are best; to avoid wasting scarce dry season time buying small quantities of cereals, which means frequent trips to markets during the bad season, when the herds most need labour; to have the security that dry season cereal supplies are assured; and to pay less for cereals. -
34. Cereal funds have to be repaid in full each year, together with a surcharge on each sack-of cereals, which goes towards the progressive constitution of the association's own cereal fund, Subsequent years' cereal credit allocations, which are reduced each year by the cumulative amount the association itself has saved, depend on the timely reimbursement of the previous year's Wan and on the association's record in constituting its own cereal fund, thus introducing an important element of financial discipline and a mobilisation



of herders' own financial resources.

Association service programmes

35. Within each association, a member is chosen by the association itself as a veterinary auxiliary or technical adviser for animal health. The choice is based on availability, willingness and a knowledge of animal disease. During his first training session, the auxiliary learns to recognise and treat some of the commonest animal health problems. He is provided with a small stock of basic medicines, and is encouraged to have regular contact with the Livestock Service agent at the nearest Veterinary post. Within his own association, the auxiliary is a teacher and extension worker, helping to make others aware of treatments for particular diseases. During the annual vaccination campaign, he encourages other herders to take their animals to be vaccinated. He is not paid for his work, but receives a small mark-up on some of the drugs sold, although others are given free.
36. The NRL project and the Livestock Service trained 20 herders (13 Twareg and 7 WoDaaBe) as veterinary auxiliaries in a week-long session. Evaluation of their work after their return to their camps showed that they were treating many animals, in descending order of frequency, for sores, diarrhea, external and internal parasites, conjunctivitis and buccal lesions; the great majority of herders whose animals were treated by the auxiliaries had never previously sought animal health care, indicating the important extension of animal health care made possible by the veterinary auxiliaries.
37. In each association, one member is also chosen as the auxiliary or technical adviser for human health. During a

week's training session, he learns to treat, or refer to the clinic, the most common diseases, with priority given to diseases that endanger children's lives, affect adult's capacity to work or are considered important by the people themselves: these include in particular malaria, fever, diarrhea, pulmonary diseases, vitamin A deficiency, conjunctivitis, rheumatic ailments, and gonorrhoea. For this the auxiliary is supplied with a small number of basic medicines, and is taught to record his consultations in a notebook. The auxiliary also helps with health extension, for example in vaccination campaigns. The auxiliary is not paid for his work.

38. The NRL project and the Health Service trained 9 health auxiliaries (6 Twareg and 3 WoDaaBe). The curriculum covered principles of nutrition and hygiene, disease transmission, recognition and treatment of common complaints, drug dosages, and the identification of tuberculosis, measles, whooping cough and meningitis for referral to the nearest clinic.<sup>4</sup>

#### Problems

39. Although the herder association programme is too recent a creation for a realistic evaluation, it is clear not only that it has been a successful first step towards organising Sahelian herders for development, but also that a large number of questions and problems remain.
40. One important set of questions concern the relationship of the new herder associations to the traditional political structures. Although, as discussed above, traditional chiefs retain few of their original powers, and the lineage and status systems are not an appropriate organising framework for development purposes, the traditional structures remain in theory in place and even, in the absence of any more

appropriate channel, are used by the government to communicate with herders in the bush. Niger government plans, especially the Development Society policy through which the countryside is intended to be organised in a participatory manner, are intended to provide a framework more appropriate for modern rural development; however, under the pressure of domestic and international events, recent changes have tended to strengthen once again the power of traditional chiefs, who are not equipped to handle such responsibilities. It is likely that the success of a cooperative pastoral development strategy of the sort the government has decided upon, with herders' associations as a first building block, will pose a threat to the aspirations of some traditional chiefs, and that as a result they will resist such a programme. This will be especially true if the programme attempts to implement the government's commitment to self-managed development from the ground up. There is a danger that the pastoral cooperative structure could be captured by the traditional chiefs, particularly among the Twareg; the proposed higher cooperative level of the Pastoral Community, grouping several herder associations, is the most likely arena for this, since the associations are deliberately designed to be too small for this to happen easily at their level.

41. The associations are an attempt to create a new, relatively uniform, development-oriented organisational framework in a heterogeneous pastoral society. They have to strike a balance between the imposition of a single pastoral zone structure, designed to overcome obvious problems of traditional social and economic stratification and institutional capture, and provide real participatory power to poor herders, while avoiding forcing a Utopian model on traditional societies which have often evolved intelligent but widely differing ways of doing things in a difficult and risky environment. Traditional organisation, and production

systems in which kinship plays an important economic role, are a component of this, and will remain an important reference point for herders within the associations; however a commitment to nation-building across ethnic lines means that the herder association programme cannot proceed on narrowly ethnic lines and that solutions must transcend ethnic particularities.

42. A similar type of problem arises with extreme status group differences and with regard to women. Twareg society in central Niger has an important ex-slave component and the
43. Women's activities are subject to similar problems. The NRL programme planned that women's activities, especially health matters connected with childbirth and infant care, should have an important place in early programmes. However, in most Twareg associations and groups where this was discussed, first Twareg associations contain many ex-slave households. Where associations are made up mainly of such households, no problem arises, but where an association contains a mixture of Twareg and ex-slave households it will be some time before all households participate equally in association decisions, work and benefits. The government, through the association programme, has the difficult task of keeping up pressure towards an equal participation by ex-slave households, without jeopardising overall association programmes. It will be relatively easy for associations to find a status quo in this respect not very different from the relationship between free Twareg and ex-slaves outside the associations; or even, since poverty of Twareg households is one of the main motives for ex-slave households to sever connections with them, for the association programme, by improving the welfare of Twareg households, to slow down the existing evolution in Twareg society. A similar problem of full participation exists in the case of households headed by women, which are not uncommon in pastoral society.

great hostility was shown by the men, and, following their line, by the women also. Although what was proposed seemed innocuous enough - bringing in a trained Twareg woman to show all the adult women in an association some elementary mother and child health techniques - the men in some associations said they would rather have no association at all than accept such a programme. However, this reaction was not universal, and most WoDaaBe and a few Twareg groups were interested in the idea. In the event, there was no time under NRL to experiment with such a programme, and it may be that the demonstration effect, once a few associations had tried it, -would change attitudes in the others, However, the lack of women with secondary or higher education - or even primary education In the WoDaaBe case - will make it hard to find people to staff such programmes.

44. A problem of a different sort will arise when the herder association programme has extended to a large proportion of the herders in a particular area. The formation of the first associations is relatively easy, since functioning units of small groups of households will be readily available to be made into associations. Later, when a majority of households in the area are already in associations, it will become harder to identify and form associations out of the remaining households, which are likely to be poorer, more isolated and less easily organised precisely because they are more marginal and exist in the interstices of the main structural framework of kinship, geographic and pastoral relations in pastoral society. Although the NUL programme successfully targeted most of its first round of associations to poorer households, there is likely to be a persistent problem of very poor and marginal households, which will only be brought within the programme by a very sustained government commitment to this action.

45. The relationship between existing government services and the

herder association programme is made easier by the national policy commitment to participatory, self-managed and self-reliant development, and this should facilitate the necessary rethinking of the role of many of the technical services.<sup>5</sup> Experience in the human and animal health auxiliary schemes in the 10 pilot associations suggests that there needs to be a clearer understanding, both by individual herders and by the technical services, of the role auxiliaries can play. Government services with inadequate budgets are understandably tempted to see auxiliaries as voluntary extension agents for government programmes, and to try to use them accordingly, or alternately to dismiss the auxiliaries either as incompetent or as competitors; herders on the other hand sometimes see auxiliaries as simple dispensers of free drugs from the government; the auxiliaries themselves, keen to practise their new skills but with a limited amount of time to spare from their own herding tasks, may find themselves uncertain about their own role and have second thoughts about spending a lot of unpaid-time; alternatively they may come to see their auxiliary work as the first step towards a job in the most junior grade of the civil service. The herder association programme deliberately sought to multiply honorary posts within each association so that each office-holder feels that he or she is one of several people doing jobs for the common good, but a change of perception is also needed on the part of civil servants as to the limitations but also the real potential of the auxiliaries.

46. The pilot associations were, for reasons outlined above, created as small functional units, but the proliferation of such associations will quite soon make necessary the creation of a higher level structure which to some degree coordinates the activities of individual associations and undertakes some negotiation with government services on their behalf. The NRL programme envisages the creation of Pastoral Communities of

about 10 herder associations as the next level in the structure, although none have so far been created. Clear dangers exist at this level both of institutional capture by traditional chiefs or other powerful people in the pastoral zone, and also of duplicating the top-down bureaucratic model whereby Pastoral Communities become a simple extension of the central and local government machinery. There is no experience to guide action on this, but it will be a major problem to be solved in NRL's successor project, the Integrated Livestock Project (ILP).

47. Many technical problems will need solutions in the next stage of the herder association programme, including especially literacy training and book-keeping, and supervision and drug supplies for auxiliaries. The credit programmes will face particular problems of risk from animal deaths, which will require an appropriate insurance scheme; faced by an unpredictable market, the cereal credit fund will need flexibility to cope with years when the normal pattern of prices is reversed and December millet prices are higher than those in June. In the longer term it will be important for the associations to develop an early-warning system for potential famine years, and to have cereal security stocks against this event; the outline of such a system was developed by the NRL project and now needs implementation.
48. The relative success of institution-building in the NRL herder association programme also leads to a more general problem of technical innovations. The association programme will not reach its full potential if it does not introduce a technical package to raise herding productivity, and the associations provide an ideal institutional framework for such innovations. Although improved animal health through the veterinary auxiliaries, and better herd management resulting from the herd restocking through association credit programmes, will contribute to greater technical

productivity, there is as yet no coherent and tested technical package of innovations. NRL range research has generated interesting ideas about pasture management, some of which may be feasible without total pasture control, and some interesting animal production ideas have come out of discussions with herders (especially concerning vitamin A deficiency, and the possibility of adapting cattle reproductive cycles through earlier pregnancy detection and targeted feed supplementation). The associations are an ideal forum for detailed and specific discussions with herders about such technical Innovations, and the programmes so far have earned some credibility among herders, which will facilitate the introduction of new and more difficult ideas. The challenge now is to move rapidly towards the development and introduction of viable packages of this sort.



NOTES

1. NRL project research results are described in Swift ed. 1984, and mapped in Swift et al., 1984.
2. For a more detailed description of the NRL herders association programme see Swift ed. 1984, Swift and Maliki 1982; for a detailed discussion of some institutional issues arising in the creation of herders' associations in Niger see Thomson 1981.
3. For membership dues, the project has designed a scheme appropriate to the herders' situation. Membership dues in cash would add another burden to herders' budgets. Instead, upon joining an association, each new member must contribute one young ram to the association, and this contribution must be renewed every two years. The rams are kept in the members' own herds for one to two years, during which time they increase rapidly in value. When the fattened rams are sold, the profit goes towards the reimbursement of the revolving fund; once the revolving fund is repaid in full, the sale of membership rams helps make the association self-financing.
4. The NRL health auxiliary programme is described in greater detail in Loutan 1982a, 1982b and in a forthcoming ODI Pastoral Network paper.
5. See especially the Niger Government 5 Year Plan (Minist~re du Plan 1980)

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