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Food Production and Dryland Management: A Somali Camel Research Agenda

Anders Hjort af Ornäs & Mohamed Ali Hussein & Christer Krokfors

This essay is about a project and its life as an interdisciplinary bilateral undertaking in the zone between research and training, until interrupted by a violent death caused by the current Somali civil war. Research content is summarized as an indicator of the interdisciplinary approach. Significant attention is also given to organizational experiences from bilateral cooperation, from combining training and research, and from seeking to introduce research findings into policy making. The project will cease in its current form by the end of 1991.

Introduction

This paper draws on experiences from a joint Somali/Swedish research project in the field of arid lands which commenced in 1982 and will conclude by the beginning of 1992. The project has been operated by a number of Somali scholars with different academic backgrounds. It has accordingly been interdisciplinary in approach, and has generally dealt with the role of the camel in Somali culture and society, although a core emphasis has been on production and economic aspects.

The Somali Camel Research Project (SCRP) was a bilateral Somali/Swedish research project. It has been financed by the Somali Academy of Sciences and Arts (SOMAC), and the Swedish Agency for Research Cooperation with Developing Countries (SAREC). The project was implemented by the Somali Academy and, in Sweden, the Department of Social Anthropology, University of Stockholm (1982-85), and the Scandinavian Institute of African Studies (SIAS), 1985-91. Activities have been going on since 1981. The idea of the project has been to go from an initial wide camel research support towards a concentration on an interdisciplinary concern of environmental management and food production under camel rearing circumstances.

The project has been strongly directed towards engaging scholars from Somalia, as it has the largest camel population in the world, by supporting their international interaction and by networking. The donors' hope is that project activities not only mobilized an interest, but also that they stimulated a debate over implementation of the findings from camel research.

There is also a need to distribute research results to camel herding communities. The research topic "Food production and arid lands management", within the project framework, has done this through the following questions, answers, and discussions:

How should one try to combine the need for improved food production from current extensive herding practices with the introduction of new intensive methods? A major worry in this context is that the attraction of research into new methods is greater than that in improving current ones. The project has avoided becoming preoccupied with fascinating technical findings. In an ecologically brittle country like Somalia, policy making requires detailed knowledge in order to ensure that new development projects do not create unforeseen events, such as imbalances in the ecological interplay between humans, camels and pastures. Much can be done about camel diseases. Milk production can be increased and new dairy prod-

ucts need to be developed. Local trade with camel products to small towns and centres could be improved. The knowledge of camel herdsman of browse and animals needs to be utilized in the planning process. One must also realize the cultural significance of the camel. These are matters which concern nomadic herders with regard to constraints established by the society-at-large. Furthermore, a number of the project activities has a bearing upon how the life of a camel herdsman could be improved with complementary activities. One has to seek modified forms for camel husbandry which are less labour intensive; shortage being one of the main constraints for improved camel husbandry. Relevant considerations must be made in boundary areas where camel herding competes with farming or other land use practices, such as charcoal making.

The Environmental and Social Framework

The environmental problems for Africa can be placed in the context of underdevelopment theory and development strategies. The background to such an effort is the growing concern in development circles that societal problems seem more difficult to master than technical ones.

Our point of departure is the Swedish investigation called "Development Aid for a Better Environment in Developing Countries: Proposal for an Environmental Goal in Development Aid" (SOU, 1987:28). It emphasizes the importance of care for the environment through a future-oriented management as an independent goal for development. It brings people into the centre for environmental work. We wish to emphasize, however, that this ambition to place people in the centre can never become a goal in itself. A balance has to be struck so that we deal with interconnections between people and environment. Therefore, the expression with a future-oriented management is rather well-founded. The difficulty will be to effectively link sustainable production systems

with technological development. The specific problem is to seek proper environmental change so that it harmonizes with participation and social justice.

The circumstances for manoeuvre, risk spreading, and economic diversification are unevenly distributed in local communities, where outcome is based on land management (cf. Sen, 1981). This tendency is reinforced when more universal resources, other than what nature offers locally, are available as well. Above all, we are concerned with the influence of national or other large scale societies on the local level through a local "elite" within a framework of new economic and political relations. This elite has access to two spheres; a national and a local, wherein they try to manoeuvre within the aggregated resource system for their own benefit.

Recent African history has demonstrated how natural disasters such as drought may lead to starvation and disaster, and which is sometimes aggravated by a conflict over uneven access to food. One aspect of the correlation between ecological crisis and political stress is the issue of control over food. The quest for food security lies behind many political conflicts; and, it results in ecological degradation in areas where pressure on land does not really permit increased food production without structural changes in the production systems. The person to whom food is not redistributed is one who feels indifferent to the wear on the land; hence, people-made degradation. Such individuals contribute to political uncertainty, while leading a dissatisfying life with a close margin to being forced to leave present circumstances. Absence of involvement in food redistribution systems is an indicator of a situation of potential conflict.

In the case of nomadic pastoralism, in this particular study the empirical base, a deterioration of the natural habitat is caused by pressure from both people and animals. Ecological factors may seemingly influence everybody's life circumstances. The ecological circumstances contain a wealth of

political, cultural and economic causes which create or maintain inequalities, and which establish a situation where certain groups of people are particularly vulnerable. A key issue is land control and property rights.

Livestock rearing in African drylands is by no means a matter of "timeless" nomadic pastoralism, operating in response to ecological conditions. It undergoes profound and rapid change, not least in the wake of the Sahelian droughts in the 1970s and early 1980s. This should be kept in mind when posing questions regarding the role of the obviously under-utilized local knowledge on camel rearing practices in the Somali context. What are the contributions, the supplements and the shortcomings, and what is the role of a specific world view ("camel complex"), etc?

One must strongly emphasize that the key to a better environment is to be found in the improvement of a social environment. The slogan "People in the centre" has such an implication. There is an acute need to formulate the problems behind development project inputs in such a way that the people concerned can understand and actually cooperate. A project has to be comprehensible and understandable for everybody concerned; and certainly there must be a feeling that the project is practical and not solely of Western design. An illustrating example is one of soil conservation input in Kenya during colonial times. Basically similar activities, which have commonly been judged successful, at that time failed entirely as nobody concerned could understand what was meant, nor would they believe in the purpose.

In the study of targets for Swedish environmental policy, development aid is claimed to seek continuously improved productivity in the utilization of natural resources. One tends to concentrate on technological transfer and easily moves away from the social environment. One often meets, in connection with development aid, a more or less hidden belief in technology, which we would claim is just as problematic,

if it does not link up with the needs of the people. The great problem is not to find technical solutions to how natural resources can be managed in an optimal way, but rather what kinds of solutions would function in current social and political contexts. When pursuing environmental and other goals we must be clear as to how and where the international system meets "the consumer" on a global, national, or local level. In Africa it is often the women, already burdened by agricultural work, who have to take on the work in a tree plantation project. Those who are hardest hit locally by a deteriorating environment, would then be the very ones who have to provide most of the labour to restore balance.

It is necessary to focus on the combined ecological crisis and political stress in African drylands. This may serve also as an illustration of a key problem in connection with desertification: What processes lead humans to ruin the basis for their subsistence? What potential is there in improving extensive production systems when these are threatened? This search for "bottlenecks" has been central in the formulation of research to be dealt with in the SCRP.

Research Findings

The knowledge which is sought in the present research project concerns existing production systems and their change. Camel production is today changing or has already changed structurally. We witness a concentration of ownership, a loss of manpower, and accordingly, less efficient management practices. We also witness a penetration by a monetary economy into a kinship-based resource distribution system. Traditional ways, for instance those of circulating domestic animals according to kinship bonds (or friendship bonds) to people in need, give way to individualized ownership and to the withdrawal from circulation of animals that have been upgraded or which have received veterinary treatment.

True, great contributions can be made from veterinary knowledge. Diseases can be cured and animals upgraded, so that production and yields can increase. True also, a shift to camel-keeping will have positive ecological effects for many areas, either as a supplement to cattle-raising or as a total change. The fundamental question, however, does not concern increased yield for the more wealthy of a rural population. It concerns what shall happen to the poor people, so crudely defined by development aid organisations as "the target group". There is a basic distinction between sectorized, technical "solutions", and approaches which involve people.

The project has generated results in both realms. Some of the intradisciplinary applied results can be mentioned:

(1) Mastitis. Examinations indicate that 10% of the Somali camels suffer from mastitis (udder infection). If sick animals are properly treated, milk production can be expected to increase considerably. The causes of the disease are currently being studied.

(2) Traditional veterinary medicine. A method has been elaborated in order to identify chemical substances in medicinal plants, effective against mites which cause mange.

(3) Oral tradition. The role of the camel in oral tradition has, for the first time, been studied and then published in Somali outside Somalia. The study has later been translated into English.

(4) Women and milk distribution. A study of the marketing system for distribution of camel milk has indicated the importance of cash income for women, both in production and distribution. The implication of the study for policy makers is to avoid trials with new systems of collection points.

(5) Small scale dairy technique. Results have indicated that costs for small scale seasonal dairy production of camel milk are too high for economic sustainability.

(6) The chemistry of camel milk. Chemical analysis of camel milk composition has increased the understanding of the

properties of casein (in particular kappa-casein) and its function for cheese-making.

(7) Population structure. The camel population in southern Somalia has been surveyed, the age structure and the spatial distribution identified.

Camel management, in itself male-oriented, could easily turn into private enterprise, controlled predominantly by affluent men, especially if Western technology were involved. This would definitely move us away from democratic ideals behind the idea of equality between the sexes, be it in popular participation, empowerment, or other political goals. It might well, however, tie in with national development plans or with commercial undertakings. Therefore, camel research in Somalia has to be placed into its context, so that the development goals are clearly spelled out. The SCRIP has also tackled this issue, though in an indirect manner, through an integrated set of activities. There have been three themes, though incompletely dealt with due to the war: (1) Local knowledge of camel rearing; (2) Improvements in current camel rearing practices; (3) New forms for camel rearing.

The greatest single importance of the camel in Somalia is that it enables most Somalis to produce their food within a subsistence economy. This production exists under extremely varying conditions, such as prolonged droughts, occurring approximately every 6-8 years, and war-like circumstances. This decisive importance of the food production dimension of the camel will continue for many years, even if planners were to try to alter it.

In Somalia one can identify a number of varying food production systems in which camel husbandry is of importance. One is agropastoralism with a combination of farming and animal husbandry. Another is pastoral with a combination of different species of livestock and/or diversification of family herds into several management units. Whatever the food production system, one also has to consider how it is linked with the urban monetary system.

Camel herding, in Somalia as in many other countries, is changing drastically. This is a rural phenomenon. A permanent migration of young people to the towns and cities has rendered livestock rearing less efficient due to an acute shortage of labour in many communities.¹ What new forms of camel herding that will emerge in the future is a basic question for the researchers to answer.

Production systems based on camel rearing have a great potential for specific regions. This fact, and the increasing interest in camels within the international development community, also holds a potential danger. If initiatives from the outside begin before an understanding of the often intricate ways in which camel pastoralism operates, the danger is great for some kind of uncontrolled development which can result in a concentration of the benefits of camel raising into a few hands. Therefore, there is an acute need for research which complements development plans. Great attention must be given to existing production systems where the camel is included in order to identify weak points in the system. Conclusions should be drawn on two levels: (1) what kind of support can be given to existing systems, and (2) what alternatives that do not risk destroying these systems can be formulated.

A first step is therefore to identify the characteristic traits of camel pastoralism which hold a potential or hide a weakness. We can then list a number of principal issues, following Hjort and Dahl (1985).

(1) Reproduction of family herds and society. The growth rate in family herds of camels is low due to biological and ecological conditions. In a subsistence economy we may regard the camel as a fairly constant resource, somewhat similar to the farm of the peasant. Yet, production capacity, the reproduction of the family herd, and to some extent the reproduction of the entire community, is continuously threatened. As a result of the high risks linked with the re-growth of herds, the camel keeper must pay much attention to his turn-over of capital in the form of animals. Herd management has

to consider both immediate food production requirements and long-term capital care aspects, such as reproduction. Cultural systems often emphasize this fact through social pressure against uncontrolled sale of animals. Project work includes population structures, herd dynamics, and decision-making.

(2) Management and work. The labour needed for management of family herds varies seasonally. There are different camel breeds and great fluctuations in the quality of pasture. Hence, one finds variations in migration patterns, albeit to a large extent either highly nomadic or fairly settled. Furthermore, great variations in access to water dams, deep wells, quality of water and climatic differences, particularly between areas with one or two rainy seasons, also influence labour requirements. The project has concentrated efforts on management but attention has also been given to labour aspects.

(3) Diversification of livestock management. Large and already sustainable households have the capacity to diversify management and keep various domestic animals. This is a way of spreading risks. There is a tendency for a transition from camel to small stock rearing when marketing is improved. A general stratification of camel herding communities also seems to occur at present, as viable camel herds are managed by fewer but wealthier persons than in the past. One might forecast a change from extensive livestock keeping focusing on milk and meat production from family herds, to more intensive methods, where production is geared more towards marketing of live animals. If this becomes the case, we will witness a limited number of owners who control great numbers of camels. The economic studies of the project concern this and related matters.

(4) Production for subsistence. Family herds of camels give milk, along with meat, hump-fat, wool and hides. Production and detailed data on herd structures is still rare in Somalia. It is clear that milk output is high, considering the ecological circumstances.

The nutritional value of milk is great. The potential contribution to increased food production in arid lands deserves great attention. Hides also deserve special interest, especially as the leather is exceptionally strong. Production capacity of milk and its nutritional quality and composition has been studied.

(5) Marketing. Marketing of live animals is an important trade, especially in countries with a large camel population. A major problem seems to be a conflicting producer/consumer interest. The producer wants to sell off old animals as this fits his herd management strategy. The consumer, however, wants meat from six or seven year old animals, as this is best quality. Market studies, both domestic and international, have been carried out in the SCRP.

(6) Transport and draught power. The total number of people specializing in camel rearing is not great when seen in a global or even a regional perspective. In comparison, the number of persons depending on camels for transport is far greater. It might even be that the camel's greatest single importance is for short distance transport and as draught animals in farming. But no precise data is available; being neither manufactured nor imported, the camel does not figure in reliable national statistics. Little of this work has yet been carried out within the project.

Concluding Remarks on Content: Food production and dryland management

How should one try to combine the need for improved food production from current extensive herding practices by the introduction of new intensive methods? A major worry, already mentioned, is that the attractions of research into new methods are greater than those in improving current ones. Hence, it is appropriate to indicate that we need to put both camels and people first also within camel research. Poor people, women, children, and vulnerable groups, are causing environmental imbalance in that they are obliged to make use of natural re-

sources beyond an ecologically sound extent. Generally speaking, however, they are victims of a mix of global, national, and local circumstances, which lead to land degradation through unfavourable North-South relations, regional political imbalances, and a breakdown of local production systems due to changes in control over assets. These victims must not be treated as causes of imbalances. We have to listen to their requirements, when it comes to camel management, especially in terms of water and pasture control. When we speak about putting people first in a development context, we have to find viable solutions for the exposed groups. This ambition is to support existing or new local resource management systems, whether they are based on family, on neighbourhood, or on some cooperative form.

Structural Experiences from the Project Cooperation

The project was initiated within a Somali research community. It was among the earliest of Somali-Swedish projects, and might even have been the one to draw Swedish attention to Somalia. The origin of the project was the "oral history" interest, along with milk-preservation research.

The perspective was soon widened, and a number of other disciplines were included: veterinary medicine and range management. It was in those sub-projects where a Somali competence could be found which were initiated. A listing of needed research was compiled in association with a listing of available scholars in those areas. The activities thereby became anchored in a national research community. The gaps identified in the process meant that much attention must be given to training. The training component has, as a matter of fact, been of importance in the project right from its start.

Each activity has been reported in the project's working paper series, *Camel Forum*, or in international scientific journals and books. The project has over the years produced a fair number of publications. For

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instance, *Camel Forum* has published approximately 40 issues.

Project Philosophy

The project had a very good start, not least in the SAREC support, with two scholars being trained, before any project began at the London School of Economics. This approach set the tone for the years to come through its emphasis on long-term thinking. Both SAREC and SOMAC support has been genuine on this matter. Patience and the acceptance of a mixed research and training strategy, also allowing for the postponement at times of a project for a year or two, has been of great support to the coordinators, as well as to the other members of the project.²

The emphasis on Somali initiatives, and not Swedish, in the project has been strong. One may, of course, regard this as a kind of experiment. The Swedish participants have insisted on only brief visits, even though they have been requested to participate more actively in the research process. This approach has been successful in that camel research in Somalia is truly localized. No one can claim that there is a Swedish involvement in Somali matters. The Somali research interest has been mobilized, and now would have been the time to hope for more university attention, had it not been for the current civil war effects on academia. We could anticipate a higher degree of international cooperation, but between fewer scholars than in the past.

The third philosophical aspect of the project, is economic frugality. The budgets we operated with have been small. Other donor representatives smile over the relatively few SEK we mention when comparing activities. But the Somali contribution has been maintained, and even increased, during the project decade. Our evaluation of the principles for shared responsibility is that the SAREC line has been quite agreeable, and that the principle has been effective for the research activities which created the project.

According to the original project plans work should have continued until mid-1993. This would be the point where two general

goals had been achieved; (a) to initiate a wide national research interest in camel research, and (b) to conclude a research project on the strengths and weaknesses in camel pastoralism in a national rural development perspective. The latter ambition proved possible only to a limited extent due to security reasons. The final project period has therefore been cut short to terminate by the end of 1991. Activities thereafter are limited to fulfilling training undertakings.

The Somali Context

As things stood in the late 1980s, the salary of a civil servant was sufficient to cover approximately one week of expenses for meeting basic needs. The implication is obvious; if a person will not be forced to have several parallel jobs, he or she had to work outside Mogadishu in order to cut costs and add field allowances to their income. One alternative was to operate a farm as a sideline to produce food-stuff. Whichever option, the situation becomes frightfully frustrating for researchers as for other people in similar situations.

Returning to the beginning of the project, we see an organizational problem which is still significant. When it was initiated, long discussions were held in Mogadishu as to where to locate the project. SOMAC should only be a networking agent, and projects should normally be based at the university. The camel project, however, was so clearly interdisciplinary, that several interests clashed. It proved problematic to find a university base, or one within a ministry, without introducing biases in the project. The conclusion, therefore, was to keep the project at SOMAC. We felt this was a wise decision. It presupposed a few things which, unfortunately, have not functioned very well. One was that the networking function of SOMAC to the various institutions concerned is not strong. Another was that facilities would be available for frequent interaction between project personnel. Neither has operated smoothly. The institutional strength of SOMAC seems to have been insufficient. The Academy has been under-

staffed, and interaction has been hampered by transport difficulties within Mogadishu (occasional petrol shortages and problems of having access to vehicles or busfares).

This is a problem which was negotiated officially. There was a formal Somali/Swedish agreement stating that frequent research meetings were conditional for Swedish support. Such an agreement was not operational on a research level, however. Formal agreements on such matters are not satisfying since there are no proportional sanctions. Instead, incentives and interests together, had to be the means towards the kind of interaction we strived for in the project.

One external problem which seem inevitable was that the project set-up had been accused of being clan-based. There was little substance in such accusations as far as recruitment of scholars was concerned. The accusations were perhaps based on the fact that project activities were concentrated in the southern part of the country for security reasons. Political accusations, whether they claimed that the project was biased or that it supported a corrupt system, are difficult matters as one has few opportunities for response. They were fortunately limited in the case of the SCRP, perhaps since they could be met with the emphasis that the project is rural-focused and in the very interest of local populations, regardless of the state infrastructure.

The Swedish Context

Since the project was implemented in Somalia, there is relatively little to say about the Swedish context. SAREC has given solid support to the project philosophy. Amongst the Swedish scholars, we have had varying perspectives and opinions on the priorities and quality levels involved with this project.³ This led to constructive dialogues, and was also appreciated in the external evaluation of the project, carried out by Indian and Sudanese experts in the late 1980s.

After the project was set up and put into balanced operation, and especially after the field research station was established with

its laboratory equipment, the number of questions about possibilities to participate from other Swedish researchers increased. One argument has been that the Swedish research community should benefit from tax-payers' money which is put into the project. The line of argument from the project side has been to remain rather adamant about keeping a low expatriate profile in the project. Our ambition has been to recruit experts, when the needs arise, from Somalia's neighbouring countries.

The phasing-out of the project is a special story. Project plans have been fulfilled in its training parts during 1991, and onwards, while civil war raged the country. The project coordinators have proposed to regionalize activities and include project scholars in exile, arguing that a whole generation of scholars, supported during a ten-year period, might otherwise be lost. This reasoning has not proven acceptable to the Swedish development research administration, represented by SAREC.

The International Context

The project is, in international terms, one of the first to deal specifically with camels and camel pastoralism. What has happened is that camel research has become "fashionable". While appreciating the positive fact that an almost "forgotten" domestic animal is given attention, it has meant complications in the daily work in that many requests for rather basic information have been made. In a longer time perspective this is, of course, only gratifying, but for the work-loaded project participants the short-term burden has increased.

Implementing Intentions

The project philosophy has, by and large, been successfully implemented. We have had to use a flexible approach, at times delaying a project here and there for a year or two, as when a scholar more or less hastily decided to be trained abroad. The bureaucratic system around the project has accepted this approach without any problems, even when budgeted funds have not been spent within the planned fiscal year.

The localization of the project initiative in Somalia has also functioned until recently. Another matter is, of course, where in more specific terms the project decisions should be anchored. A considerable amount of friction between scholars and the SOMAC base has been noted. There was also a generally felt need by Somali participants to have more frequent and longer visits by Swedish colleagues. The counter-argument has, of course, been the policy of non-involvement.

The project has suffered from a limited amount of braindrain. We have from the start assumed this to be inevitable. To some extent we have noted that scholars have left the country for political reasons. More common was the tendency that scholars were recruited by development aid agencies, at a salary level tenfold or more to what the project could pay. This problem is known in many countries in the developing world where commissioned research and its short-term character is a burden for the educational system, but an asset for the individual researcher. We noted the circumstances with regret, but considered that in a longer time perspective the project would have a positive collective effect, including the research community. At the same time we must note that the cost of the project was relatively high, and that it would have been feasible to slow down this process. We assume that development aid agencies would be uncooperative, but perhaps the Somali government could have enforced the kind of contractual agreement reached between SOMAC and SAREC. This agreement mandated that those civil servants who receive major training through the project would agree to work three years for the project after concluding their training period.

Training Versus Research

As indicated above, the project has had a strong training component right from the start. We have sought "sandwich" solutions by co-financing training in association with other concerned parties. We have also been restrictive with PhD training, as well as to the extent possible, with MAs or MScs. In-

stead, the ambition was to concentrate on special training courses, not least those which have a practical, rather than theoretical and sophisticated, quality. This is a sensitive matter, as it is understandable that a scholar wants as general a training as possible, which often puts the individual's interest against those of the project and the Somali research policy.

The SAREC official policy with regards to training has changed during the life-time of the project. During the early years we had to speak in a low key about training, since the policy was only to support cooperation between fullfledged researchers. After an evaluation of SAREC activities and its recommendations, it became more accepted to present training as a legitimate activity in research cooperation. We appreciated this very much, and saw it as the only realistic alternative strategy approach.

Short Term—Long Term

The project experienced several time constraints. The individual researchers were mostly young and wanted to travel abroad to receive further training. They played with several alternatives simultaneously. Suddenly, one alternative would prove successful, and the other activities came to a stop. An element of stochastic quality and secrecy was thereby added to the project. Such a tendency should be countered by establishing redundancy in the project through doubling each research position. This has been proposed several times but was difficult to implement, perhaps as membership in the project was in itself an asset to be protected from outside competitors.

Project planning had to be made from a short time perspective. We have never operated with a longer time horizon than three years in the cases of budgeting. This created no problems as long as the long-term thinking was not hampered. It has meant that certain projects have not been concluded during a project period but allowed to continue the following period. From the outside administrative perspective this may look like poor planning; but the relevant question is

what frame of reference one has, a research administrative one, or one relating to content. In this way short-term planning has stood against long-term planning.

Interdisciplinarity

The project has been interdisciplinary. The balance, primarily between social and natural sciences, has been maintained throughout the period. The project has been provided with a cultural framework through the humanistic research and its interest in camel oral tradition. This is a fact that has in the past meant a certain amount of trouble for the coordinators, since traditionally strong disciplines have insisted on increased presence in the project. The SAREC support from upholding the balance deserves recognition.

The interdisciplinarity should also be manifested in research cooperation between the different scholars on the project. At times such cooperation has been successful, and in other periods it seems to have been lacking. The intended regular meetings to present practical work have, however, only occurred occasionally during the early phases of the project. It was not until the second half of it, or even later, that they were put into effective operation.

Notes on Project Organization and Activities

One corner stone of the project has been that work should be carried out primarily by Somali researchers. The idea behind this position is that research should be thoroughly anchored in the Somali research community. This approach reflected a conclusion for the project to gain long term stability, and to avoid what is occasionally seen as a neo-colonial situation where expatriate researchers benefit most. The mobilization aspect must be given priority over that of obtaining quick answers to the most urgent questions. In the early long term planning of the project, a matrix was set up with available capacity against research needs, well before a strategy of research and training priorities was made.

The formulation of sub-projects has depended on the availability of Somali researchers rather than on issues which require immediate research. This approach had to be primarily judged against short term, intensive expatriate inputs, which often lead only to technical solutions of complex development problems. Thus, the only expatriate input into this Somali project has been from four Swedish researchers, including one assistant, and one Swiss researcher. All have been employed on short-term or part-time basis.

The Somali Camel Research Project has aimed at a deep understanding of the role of the camel today and possible improvements in the future. In order to reach such improvements, especially for the poorer strata of the rural population, it is important to use existing knowledge about the camel and its relation to the physical and social environments. In this connection it is recognised that the Somali people are going through a period of transformation from an orally based society to one where written language and video are increasingly used for communication. Therefore, the Somali researchers have a unique competence—namely, deep insights in the Somali culture and language. Such a competence is a prerequisite when starting research from already existing, orally expressed knowledge, transforming it into relevant research projects, and disseminating the outcome back for use by local planners, administrators, and camel herders.

This philosophy of the project is what has led to an emphasis on long-term, low-profile, and localized research activities. Superimposed is an interdisciplinary approach. The possibilities to undertake such research was greatly improved through the new field station at Yaq Bariweyne. This station would also function as a base for an established system of on-pasture research and training on camel herds.

The ambition to immediately disseminate research results back to the camel herding society also implies new supplementary ways of reporting research to those commonly used in scientific projects. Seminars where the researchers and the camel herd-

ers come together for discussions about current problems were arranged to a limited extent, but with great success. These activities should be given priority.

Due to the present situation in Somalia, it has been increasingly important to realize an underlying idea of regionalization of the project. Cooperation is sought with researchers in neighbouring countries or those with similar research issues, such as Kenya, Sudan, India, and Saudi Arabia. Scholars from India and Sudan have already been engaged in the project for shorter time periods.

The interdisciplinarity of the project is manifested in a number of ways. The scholars have carried out periods of field work in groups of three to four persons. This approach has been greatly appreciated both by scholars and local communities. It faced some logistical difficulties due to petrol shortages, but was improved once the field research station, with a small laboratory was established at Yaq Bariweyne. The scholars in the project had regular meetings in the form of bi-monthly seminars at the Academy. The training programmes offered to participants have even expanded slightly outside the individual speciality, to the extent that two persons have been trained in Uppsala.

Thus, the project philosophy: Localized research on a long-term basis, with a kind of interdisciplinarity generated through practical interactions between participants. And, the rural focus manifested through the selection of site for the research station outside the capital Mogadishu, and the emphasis on interaction with herdsman (including a nomadic experimental herd).

Conclusions

Somalia is considered to be one of the more difficult African countries for the kind of research work with which we are involved. In spite of this fact, the project has been in operation since 1982, has created a genuine research interest in the camel and its role in the country, has produced a competence

level among a generation of scholars, and has come up with a fair number of publications. However, support from the outside is necessary also for the years to come. So far, the input has been from Sweden, *albeit* with considerable other international cooperation. When the project becomes focused on specific problem fields, an important move would be to establish South/South cooperation more systematically with a few counterparts. Experiences from India and Egypt should be evaluated from a Somali perspective in order to see what contributions can come from neighbouring countries under a regional umbrella. It would also be appropriate to move from research to development by means of implementing findings of the Somali Camel Research Project. Contacts have been established with several interested partners. If moving into this field, it is our strong opinion that emphasis should be on production and possibly range aspects. The focus would be on sustainable arid lands management and sustainable food production through existing systems. The prime beneficiaries would then be local communities.

Notes

¹ The generality in this trend has to some extent been documented in an earlier project based at the Scandinavian Institute of African Studies, "Camel pastoralism as a food system", coordinated by G. Dahl and A. Hjort af Ornäs. It consists of workshops between herders as experts and national researchers. These have been held in Ethiopia (Nazareth), Kenya (Marsabit), Mali (Gao), Somalia (Baydhabo) and Sudan (Omdurman).

² Somali coordinators are: Mohamed Ali Hussein, Mohamed Said Samantar and Ahmed Abdi Elmi. Anders Hjort af Ornäs is the Swedish coordinator. The project research assistant is Christer Krokfors and the project secretary Anne-Marie Vintersved.

³ The Swedish staff has consisted of a coordinator (20% working time), a research assistant (50%), and a secretary (60%), forming a secretariat at the Nordiska afrikainstitutet (the Scandinavian Institute of African Studies). Apart from this, Set Bornstein as a veterinary advisor (20%), and Märta Larsson-Raznikiewics as a milk chemistry advisor (occasionally) form the remainder of the Swedish input.

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