Development of animal industry and improvement of animal health in the Central African Republic

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Summary: Economically speaking, the most important animals in the Central African Republic are bovines, particularly zebu. They are kept under extensive, nomadic conditions. Attempts to improve cattle husbandry through grazing management are being conducted jointly by the General Directorate for Animal Husbandry and the National Federation of Livestock Owners, which represents and assists local groups of cattle owners. Much effort is required for providing infrastructure, schooling and specialist services for cattle owners.


Development plans for livestock in the Central African Republic (CAR) cannot be discussed without first mentioning the facts regarding the physical, social and economic environments, which have their own special features in comparison with other African countries.

OUTLINE OF BASIC INFORMATION CONCERNING THE ENVIRONMENT AND ANIMAL HUSBANDRY IN THE CENTRAL AFRICAN REPUBLIC

The Central African Republic covers an area of 623,000 km² in the heart of the African continent, surrounded by Cameroon to the west, Chad to the north, Sudan to the east, Zaire to the south and Congo to the south-east.

Most of the country consists of a plateau separating the Congo and Chad basins, at an altitude of 500-800 m. About a quarter of the total surface area is suitable for cultivation.

The climate is varied, comprising from south to north a Guinean zone of dense forest about 100 km wide, a Sudano-Guinean zone of scrub savannah 300 km wide, a Sudano-Sahelian savannah 150 km wide and a Sahelian steppe at the north-eastern extremity.

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Rainfall varies from 1,600 to 1,800 mm, and the dry season lasts for 10 months in the south and 6 months in the north.

The human population numbers about 2.6 million persons, 72% of whom live in rural locations. The population density of these rural areas is 3 inhabitants per km².

The gross product was estimated to be 264 billion CFA francs in 1984, 80 billion being attributable to agro-pastoral products. Animal products amounted to 36 billion francs in 1984, or 45% of the agricultural and 13.6% of the gross national products.

Cattle farming accounted for 81% of livestock production. Cattle are kept mainly by the Fulani herders of Mbororo, drawn from the Wodabe, Djafoun and Foulbe tribes, the first of which arrived in the CAR in 1920.

Numerically the bovine population is dominated by the Acajou and Akou varieties of the Mbororo (or Red Bororo) zebu-type breed, the Fulani zebu and its Goudali variety, and the Arab (or Sudanese Shorthorned) zebu in the north-east, together with some thousands of N'Dama and Baoul cattle imported from West Africa between 1960 and 1970. The total population is about 2 million, although it varies from year to year because of migration linked to adverse climate, or political or epizootic events in countries bordering the north and east.

The country has 257,600 agricultural units, only 3,000 of which use cattle for draught purposes. There are only 370 owners of cattle or zebu who also practise cultivation. The rest of the cattle are owned by 17,500 Fulani families numbering 135,000 persons, or 6% of the national population.

These persons are distributed among 31 of the 48 sub-prefectures, and they have access to 16 million hectares of grazing land, which theoretically ought to support extensive, transhumant husbandry with one livestock unit per 5 hectares, equivalent to a total of 3.2 million livestock units (omitting cultivable land not under cultivation).

With the exception of salt and soda, no feed supplement is used even though supplements are available in abundance (e.g. cottonseed).

A single family of graziers owns an average of 120 zebus.

The average herd is composed of 19% of calves (class 1), 35.5% of young cattle of classes 2 and 3, 4.3% of bulls, 7% of beef cattle and 35.5% of cows.

The conception rate is about 60%. A survey has shown that the mortality rate is about 32% of calves, 16% of young cattle and 4% of adults. The mortality rate may have increased slightly during the past decade, because pressure on grazing land at the northern frontiers and in medium-altitude regions of the north-western plateaux has resulted in a movement of herds towards the south and south-east into the Sudano-Guinean climate, which favours parasitic diseases.

Turnover rate varies with fluctuations in the market for cattle on the hoof, but averages 12%.

Destocking is related directly to the expenses which the owner considers to be essential – basic food (manioc, maize), veterinary products, taxes and duties, clothing, ritual ceremonies.

For example, bouts of unfavourable weather lead to a rise in the price of manioc, resulting in major destocking, which invariably reduces the price obtained for the cattle. Since there is little possibility of reducing food requirements, such events result in a loss of capital goods.
Owners rarely take precautions against such events by destocking in periods when the climatic conditions are good. In times of scarcity, a growing number of livestock owners resort to agriculture (almost half of them in certain zones), a phenomenon which was unknown until a few years ago.

Trade in cattle is not usually conducted openly, so it is difficult to establish the facts. Whereas the demand is concentrated, the supply is fragmented. Economically solvent operators are scarce (41 registered in 1984). Transactions are made on credit between purchasers and vendors, without the banking system being involved. Default of payment is common, to the detriment of the cattle owner.

Theoretically the CAR has a surplus of cattle, but the official statistics show an excess of imports of cattle on the hoof from Chad and Sudan (about 70,000 head) over exports on the hoof to Cameroon and Nigeria (40,000 head). A survey is underway to check these facts, but there is no doubt that a major flow of cattle to Cameroon and Nigeria exists, for which there is no direct data.

In 1984, average prices received by producers were 571 CFA francs per kg of beef on the hoof and 83 CFA francs per litre of milk.

The average weight of cattle traded is 140 kg per carcass, with a slaughter yield of 48%. Average availability of milk not taken by calves is 1.17 litres a day from each lactating cow, half of which is consumed as fresh milk, the rest being converted into butter and coagulated milk.

In the Ombella-M'Poko Prefecture near Bangui, the average earnings per family of cattle owners were 670,000 CFA francs in 1985. 88% of this revenue came from the sale of cattle, 8% from the sale of milk products and 4% from various sales, including those of agricultural produce. Revenue is a function of herd size, and it ranges from a minimum threshold of 345,000 francs for less than 50 cattle to over a million francs for 200 cattle or more. The size of the average family is 8, but it varies from 5 persons for a herd of less than 50 cattle to 12 for a herd of more than 200.

A family's annual expenditures on mineral salts, veterinary products, vaccines and membership in the National Association of Central African Breeders amount to 114,000 francs, 27,000 of which are spent on veterinary drugs and vaccines.

Mode of husbandry and ways of life among graziers

Because of the space available in the CAR, cattle are not usually supervised, and they return to the encampment by themselves in the evening. When there is no more vegetation, the cattle tend to go further afield, so the owner may be obliged to move with the animals. This mode of husbandry entails a life far from the cultivated zones and from settled villages, where schools, dispensaries and markets are (sometimes) located. This situation has implications for development strategy in livestock which are very important, for the following reasons:

- Given the importance of vegetation, the encampments of livestock owners are accessible only on foot, often lying more than 10 km from the main roads, where villages of farmers are located.
- The owners do not send their children to school.
- They have no access to medical or veterinary care unless they travel long distances. The same problem applies to trading their products and making purchases.
- Their habitations are very rudimentary, and are permeable to rain.
They seldom have any contact with advisory officers.

An extensive exodus is underway among young persons, who prefer to take a chance elsewhere rather than submit to such a way of life, aggravated by a domineering patriarchal system.

In addition, the Fulanis are a distinct social group, firmly attached to their religious and social traditions, and under the rule of traditional chieftains. The chieftains are very powerful and are backed up by the administrative authorities. A grazier cannot defy a chieftain without having to move to another area, where he is likely to encounter similar problems.

Indeed, migration is as often prompted by internal disputes or by conflicts with indigenous farmers, as it is by the search for new grazing.

The young exiled Fulanis who join the ranks of the urban unemployed are no longer young enough to be sent to school. Moreover, they are rejected by their clans, and are therefore incapable of being used as instructors in their home territory.

So far, not a single Fulani in the CAR has gone to a university. Four are employed by the Animal Husbandry Service out of a total of 341 officials.

Fulani society is thus undergoing change and is in considerable disarray. Paradoxically, this state of affairs has rendered it more receptive than ever before to the innovations proposed by development projects.

Any development plan which fails to take into account these fundamental sociological facts is doomed to complete failure.

It is also clear that development plans have to meet the essential needs of the producers, particularly regarding literacy, health and guaranteed provision of foodstuffs.

In conclusion, before massive educational programmes can forge a generation capable of coping with a market economy, it will be necessary to introduce more limited programmes extending over at least ten years. This is the time required for young persons responsive to the issues of literacy and training to reach the rank of decision-maker within their families.

Other types of animal husbandry in the CAR

Animal production other than cattle accounts for only 19% of the gross product of the livestock sub-sector.

Apart from 4 semi-industrial poultry units at Bangui, animals are kept under extensive husbandry. Extremely fragmented, such husbandry usually represents a marginal activity for producers in villages, who are little disposed to intensify their activities or to introduce new practices. The animal populations are about 80,000 sheep, 900,000 goats, 400,000 pigs, 1 million poultry and a few thousand hives.

Modest advances have been made in apiculture, but there is still no structured plan for improving these other types of husbandry. Most of the research on animal production has been devoted to cattle.

Diseases of cattle in the CAR

The subject best studied is that of animal health, for which considerable investment was made between 1960 and 1970, and from 1980 onwards.
Given the climatic and ecological factors outlined above, and the permanent influx of cattle from the north, conditions in the CAR are exceptionally favourable for parasitic diseases. This phenomenon has been intensified by the shift of cattle-keeping towards the south and south-east, where ecological conditions are even more unfavourable for health.

_Gastro-intestinal parasitism_ is the cause of most deaths, particularly among young cattle, 80% of which are infested. In addition, liver flukes and cysticerci are found in 30-40% of slaughtered cattle.

_Ticks_ are a permanent problem throughout the territory. Rickettsial infections and piroplasmoses are responsible for 8% of the total mortality. 10% of the cattle population is affected by dermatophilosis during the rainy season. Manual removal of ticks is one of the most tedious and indispensable daily activities of the cattle owner.

_Trypanosomiasis_ affects three-quarters of the cattle-breeding zones. Tsetse flies are most numerous around the southern forest zone, along watercourses and forest strips.

For some years the cattle owners have not hesitated to drive their herds in tsetse-infested zones, for they have learned to use trypanocides with growing success.

Nevertheless, trypanosomiasis is responsible for 10% of calf mortality, 13% of adult mortality and also for 18% of abortions. Long-term exposure to tsetse flies is frequently associated with depression of the conception rate of cows, leading to progressive loss of capital assets. It seems, however, that this phenomenon is gradually being overcome as a result of the wide distribution of trypanocidal drugs during the past 2 years.

_Contagious bovine pleuropneumonia_ has been controlled to some extent since 1980, but outbreaks still occur at the northern frontier, necessitating great vigilance as well as annual vaccination of all cattle.

Tests on serum samples for _brucellosis_ have been positive in 25% of female cattle. Brucellosis is responsible for 20% of all stillbirths and 36% of abortions. A study of the economic and technical feasibility of generalised vaccination is in progress.

Finally, the country was involved, in 1983, in the reappearance of _rinderpest_, and lost some 10,000 cattle. This necessitated the organisation of generalised vaccination campaigns in 1983, 1984 and 1985. No outbreak has been reported since then.

**ACTION TAKEN TO DEVELOP ANIMAL INDUSTRY**

Since the country became independent, the government, assisted by the international community, has financed major livestock development plans in the following areas, from 1960 on:

- Creation of rural livestock communes administered by the traditional Fulani chieftains and supported by the central administration in north-western and south-eastern zones, where husbandry was a major activity at the time.
- Creation of the infrastructure needed for animal health, with veterinary centres and acaricidal dips for cattle.
- Organisation of vaccination campaigns, free health care for animals, strict application of disease control procedures, and regulation of transhumance.
— Establishment of veterinary and zootechnical research stations, ranches for breeding and transit, and training centres for animal traction.
— Importation of 15,000 trypanotolerant cattle, distributed to farmers in return for some income.
— Education abroad of higher technical grades, and education of medium technical grades at a national specialist college.

These actions permitted a remarkable revival of cattle-keeping in the CAR, but they were suspended abruptly in 1970.

Faced with the sudden curtailment of vital supplies as a result of this suspension, the government and the most influential cattle breeders set up the National Association of Central African Breeders in 1972, funded by an obligatory annual fee from every cattle owner, and by a concession on taxes levied on the movement and marketing of stock.

This organisation was charged with promoting all the activities needed to develop the animal industry, particularly the importation and distribution of supplies, initially distributed to graziers free of charge.

This mode of distribution soon exhausted the funds and led to internal rivalries within the Association. At this point, the government appealed to the international community, in 1979, for finance to rehabilitate the veterinary service. The project found favour with the World Bank, BAD and FIDA. This rehabilitation had already commenced a few years before in certain prefectures in the East of the country, through a regional project financed by the European Communities, involving animal health activities, small-scale breeding and the distribution of trypanotolerant cattle from a State ranch.

The new development project for the West of the country commenced in 1980.

Activities for rehabilitating the Animal Husbandry Service have concentrated on:
— Restoration of the animal health infrastructure, with provision of accommodation for officials.
— Logistic and technical support for the education and retraining of veterinary technicians, provision of equipment and transport, and of incentives by means of various allowances. Since then, the staff of the General Directorate of Animal Husbandry has comprised 17 indigenous veterinarians, 3 expatriate veterinarians, 7 zootechnical engineers (including 2 expatriates), 5 animal husbandry engineers, 9 engineers for animal breeding operations, and 37 higher animal husbandry technicians, totalling 78. There were 267 technicians of medium grade and 316 other members of staff, bringing the total number of State appointments to 661.
— Creation of a rolling fund for veterinary products, made available to technicians in the form of credit, to ensure the efficient distribution of drugs for purchase.
— Setting up research and development schemes for the management of grazing land by selecting a new pilot area, where experiments will be conducted on a “life-size” scale, with the voluntary collaboration of cattle owners.
— Progressive transfer of the activities of the National Association of Breeders to the General Directorate for Animal Husbandry.

An inherent error of judgment in this strategy was the assumption that cattle owners and their representatives would agree to accept the innovations proposed,
without being able to participate in decisions concerning them, and without being able to conduct certain essential actions — a situation aggravated by the sociological gap which generally exists between technicians and owners.

Investigations by a group charged with follow-up and evaluation of the project soon showed that only 5% of expenditure led to action perceived by the cattle owner as being useful to him.

At the request of the government, the project was almost entirely re-orientated in 1982, as follows:

- Some of the finance was given to the National Association of Breeders for the distribution of supplies, an operation made possible by the provision of a partly subsidised rolling fund (33% of purchases during two years) and by the technical support of the General Directorate of Animal Husbandry and its experts. A subsidy was also applied to the construction of offices and purchase of vehicles to serve as mobile pharmacies.

- Government also decided to stop the recruitment of pupils to be trained as technicians, in view of a surplus of trained officials for whom no work could be found. Thus the function of the College was progressively geared towards permanent retraining of officials already employed, and towards young persons wishing to become breeders of small ruminants.

- In addition, a service for the education of breeders was introduced, with the objective of identifying the most influential breeders in each sub-prefecture of the project area, and inviting them to take part in courses lasting 5 or 6 days. During these courses there are discussions with a high-level technical team, who put forward the principal innovations required for the development of animal husbandry. Participants are encouraged, at the end of each course, to organise a veterinary pharmacy for their community, which will be supplied regularly by vehicles of the National Association of Breeders.

Care is taken to invite to the courses the veterinary technicians responsible for the geographical area concerned. They in turn nominate breeders, who receive practical instruction during the course, and informative documents specially prepared for illiterates, which enable them to provide first aid for cattle while awaiting the arrival of a technician.

- In 18 months 1,200 breeders benefited from these courses. During this period the national trade in veterinary products purchased by cattle owners increased from about 50 million to 450 million CFA francs, or about 175 francs per bovine, compared with 25 francs in 1982. This rapid increase in the purchase of drugs has enabled the National Association of Breeders to be self-supporting since June 1985.

- Research and development activity in the extensive management of grazing land has been transferred entirely to another site consisting of a breeders' commune well populated by cattle. It has become clear that any innovation concerning the organisation of management of traditional grazing land needs to meet two requirements, without which it cannot succeed:

1) Regarding the structure of the Fulani environment, it was felt necessary to create associations having the approval of the traditional chieftains and the freely obtained consent of all the cattle owners from groups of encampments. The rules for these associations are recognised by the State. In order to consent to such an innovation,
the owners must be made aware of the material gains which the scheme would offer them. The establishment of a community pharmacy may be sufficient to arouse the interest needed for attaining this objective. Capital for the community pharmacy is provided by an initial contribution from all those involved, followed by payment for all subsequent purchases, while accepting prices slightly higher than those charged by the National Association of Breeders, in order to cover the risk of losses. Administration is entrusted to a treasurer acceptable to all, whose renumeration is decided jointly, resulting in considerable variation between one association and another.

These associations are called "Groupements d'Intérêts Pastoraux" (Grazing Interest Groups). Twenty such groups are currently operating in the country, at least five of which arose spontaneously by copying the pilot groups initiated under the project.

Once the test exemplified by the creation of a village pharmacy has given general satisfaction, additional topics, such as the summary management of grazing land, can be introduced.

2) The second requirement for the introduction of a grazing management programme is the adoption by government of legislation to alter the status of commons, which exist in most African countries.

The strategy which we are advising government to follow is to adopt legislative texts drawn up under the project, which will permit well-established groups of cattle owners to obtain conditional land rights.

Such texts would grant exclusive rights to use grazing land, provided that the persons concerned agree formally to observe rules laid down and supervised by agro-pastoralists of the Animal Husbandry Service. The latter would be empowered to evict the group in favour of another group if the instructions for grazing management are applied improperly by the beneficiaries.

These texts are about to be promulgated in the Central African Republic. They will be implemented by setting up two experimental zones for agro-pastoral action, which will be accorded to groups of cattle owners who have demonstrated their cohesion.

The success of these experiments will depend on the following factors:
- Close collaboration with local authorities (Prefect, Sub-Prefect, Mayor of a Commune).
- Grazing rules which are not excessively stringent, to be based upon preliminary, very detailed studies of sociology, water supply and plants available for grazing within the chosen area.
- Resolutions of problems concerning the requirements of the group for provision of food, medicaments, shelter, schooling, human health care, and possibly the construction of an acaricidal dip and a community shop.

It should be noted that there are plenty of water points in most of the grazing land of the CAR selected so far.

THE NEW NATIONAL PROJECT FOR LIVESTOCK DEVELOPMENT

These investigations have made it possible to define and evaluate a national project for livestock development, which was scheduled to begin at the end of 1986.
The objectives of the project are economic, social and conservational (protection of the environment).

**Economic objectives** are an increase in animal production in both volume and value, leading to an improved trade balance for the country, better circulation of immobilised monetary resources, with the banking sector making a more substantial contribution, and a positive differential of taxes and duties for the public purse.

**Social objectives** involve meeting the essential needs of the cattle-owning community, their better integration into the national community as a result of decreased nomadism, and an increasing coverage of the needs in animal protein for all consumers in the CAR.

Finally, the **conservational objectives** aim to create balanced utilisation and management of the vegetable biomass, in order to avert both under-utilisation and degradation by over-utilisation.

The principal elements of the project will be put into operation by the National Association of Breeders, the Directorate General for Animal Husbandry and Animal Industries, with the latter transferring some of their duties to the Association of Breeders.

This Association has already prepared for such a transfer. Its General Assembly adopted new statutes which transform the Association into a National Federation of Central African Breeders in conformity with the greater degree of decentralisation brought about by the multiplication of Grazing Interest Groups. The latter convene in regional federations, whose role is to represent the small groups and to participate in decision-making and supervision activities of the National Federation.

Government acts as a guardian to the Federation by the automatic participation of a high official at meetings of the General Assembly and the Administrative Council which it elects. A Secretary General, elected by the Administrative Council, is entrusted with executive functions though government has the power to reject the result of an election and to require that the Administrative Council hold a fresh one.

This National Federation (formerly the National Breeders' Council) will be responsible for two main functions:

1) Establishment of a "**federation activities**" service to offer complementary training to breeders, and at the same time carry on programmes for literacy and information.

This service should also help in setting up and staffing breeders’ groups and their regional federations, as well as providing permanent supervision through direct collaboration with officials of the General Directorate of Animal Husbandry and the heads of field veterinary stations, and by retraining during the execution of the project.

2) Administration of **supply services to cattle owners** for veterinary drugs, feed supplements (such as grain and cottonseed cake) and equipment.

There are three main pathways of distribution:
- Mobile sales on established routes traversed by vehicles on fixed dates.
- Sales to groups or individual owners from regional depots based at sub-prefectures in which cattle breeding is important.
Sale through appointed animal husbandry technicians, authorised to take a share of the profits during interventions conducted for the benefit of graziers.

Finally, elected representatives of the National Federation will always be consulted before important decisions are made concerning the execution of the functions of the Directorate General for Animal Husbandry.

The latter will receive additional logistic support in order to conduct its traditional functions of consumer protection and implementation of disease control regulations, both within the national framework and to meet the requirements of international agreements drawn up by the OIE and the Organization of African Unity.

The Directorate General will be responsible for all vaccination campaigns, including the use of vaccines which have to be kept refrigerated, in collaboration with pan-African organisations for rinderpest control. These vaccinations are subsidised in part, but a contribution from the beneficiaries is required, amounting to 30-40% of the total cost of vaccination. Representatives of the Breeders' Association collect these fees directly, in the presence of the technicians.

Interventions to control outbreaks of contagious diseases are subsidised in full.

Vaccination is performed by teams of veterinary technicians occupying field appointments. Upon selection, they are given special instruction with a view to their future role as instructors and advisers to all cattle owners.

Upon satisfactory execution of their duties, the technicians are paid bonuses from funds of the national project and the National Federation. In future, such bonuses may be paid to medium-grade technicians in the form of veterinary products.

The Technical College for Animal Husbandry at Bouar and its experimental farm is devoted exclusively to refresher courses for officials and technicians through specialised seminars covering animal health, education, management of grazing land, laboratory techniques, etc.

A national laboratory for veterinary and zootechnical diagnosis and research will be built at Bangui.

Planned activities include an entomological service to study simple procedures for controlling tsetse flies. These procedures must be suitable for use by groups of cattle owners (traps, impregnated screens, etc.). An agrostology service is giving priority to research on ways of controlling invading plants, such as Laos grass.

An agro-pastoral service is being formed in order to create fairly large-scale zones of agro-pastoral action, as described above. Over five years, 18 zones should be created, each covering an average area of 30,000 hectares.

This action will be accompanied by construction of premises for zootechny and animal health, comprising access roads, storage accommodation and a meeting room. Construction of acaricidal dips is planned in the new livestock zones where agro-pastoral actions are underway.

The acaricidal dip has proved to be an attractive proposition to cattle owners in the Republic. In exchange for guaranteed use of dips, cattle owners might accept certain stipulations concerning grazing management.

However, the efficacy of acaricidal dips depends directly on contributions from the beneficiaries towards the recurring costs, and good collaboration within a group of owners responsible for self-management of dipping.
Experience has shown that failure of management will lead to the abandonment of dipping, or its appropriation by a dominant owner.

In addition, prudence should be exercised in plans regarding dips, for research may well produce a less onerous method of controlling ticks in the future.

All attempts to destroy ticks by fixed or portable spraying equipment have failed as a consequence of the type of husbandry practised in the Republic and the large average herd size. We shall soon investigate the new long-acting insecticides applied in concentrated form.

Another service included in the new project is devoted to encouraging the breeding of trypanotolerant cattle and the use of cattle for traction. Existing herds will be regrouped under better qualified and more highly motivated breeders. Staffing will be increased.

Agreements have been drawn up with Rural Development Societies which use draught oxen, in order to facilitate transactions between vendors and purchasers, and to ensure that the cattle are properly cared for by village delegates trained for this purpose.

A commercial service is currently examining ways of improving trade circuits, and of providing the information required by potential new investors. This service also assists investors in making contact with producers, and in preparing proposals to be submitted to the banking sector that specialises in commercial credit for local trade and for export.

Private investors are currently being sought to provide some of the capital required for a factory to process fresh milk collected from nomads around the town of Bangui.

Finally, the project is providing funding for all the indispensable services of the Directorate and ancillary functions – services which are common to the National Federation and the Animal Husbandry Directorate, including computerised accounting, follow-up, evaluation, and a mobile workshop.

The total cost of the project is about 13 billion CFA francs, spread over five years.

It should be mentioned that this activity may well create an oasis of prosperity while other State departments dealing with vital areas are deprived of extra funding. The project could be jeopardised by negative reactions if too many other departments are neglected.

The Central African Republic still belongs to the LDC group because of its geographical situation. This explains why the Directorate General of Animal Husbandry, like the other departments, spends 97% of the annual budget on salaries and only 3% on operating costs. This problem is common to all the State departments, and will not be overcome unless the State economy improves. Only a substantial increase in international aid will help make this possible.