

were fewer persons per physician and per nurse in 1977 than in 1960 in almost all the countries on which information is available, though health facilities and personnel were still concentrated in the urban areas.

While life expectancy has increased, the average is still low in comparison with the other parts of the world. In fact, the unweighted average life expectancy for 38 African countries on which information is available for 1978 is 47 years against 39 years in 1960, an increase of 20.5 percent in a decade. This improvement has implications for population growth and labour force increase and the analogous requirement for jobs. The number of children and youth in the population is increasing, which has serious implications for dependency ration and productivity in the economy. Similarly, the average annual growth rate of the labour force and the projected increase in unemployment is bound to affect females more than males.

Another result of the type of development and economic growth in the past two decades has been the unprecedented rate of urbanization. While Africa remains the least urbanized part of the world, it is the most rapidly urbanizing region. This has serious implications for rural-urban migration, urban population growth and the housing, health, water, electricity and transportation problems, land use and urban ecology, the nature between town and country class structures and the labour market, squatter settlements and employment and social amenity problems.

One surprising feature of exports and imports over the past two decades is the persistence with which we have clung to the western world in general and the former metropolitan countries in particular. Moreover, exports remain dominated by fuels, minerals and metals. Other primary commodities, mainly agriculture and food products, dominate the external trade of 20 of the 38 countries. Similarly, most imports consist of machinery and transportation equipment. In effect, there have not been significant structural changes in the components, destination or provenance of trade. This is disturbing in light of balance of payments, related debt services, external public debt and international reserves. Meanwhile, expenditure is increasing on the so-called invisible factors such as shipping, banking, travel, and consulting services. When some countries do achieve a surplus in merchandise exports and imports, it is wiped out by debits on the invisibles payments. Therefore, external public debt has continued to pile up while international reserves have declined.

It is clear that performance over the past two decades has not been satisfactory either for Africans or for their trading partners. The picture, however, while not encouraging is far from being dismal. To ensure a more satisfactory performance in the years ahead, we must examine those specific factors which have been responsible for recent trends.

Since agriculture and food constitutes the largest sector of most African economies, not only in terms of

output but also of employment, why have they been stagnant in Africa? In answering this question, one must isolate such *force majeure* as drought and floods (of which Africa has had its share, particularly in the Sahelian countries) and concentrate on the measures under the control of governments. Of these, the most deficient have been price and investment policies which have discriminated against farmers. Similarly, support services, including extension capital and credit, marketing and information, have not been quite effective.

However, it is now widely accepted that the modernization of the agriculture and food sector depends on the critical factors that initiated and supported the "Green Revolution", namely, improved seed varieties, fertilizer, irrigation and capital. Unfortunately, the revolution has not yet come in Africa. While the cost of fertilizer, of construction of irrigation works and of obtaining capital have been increasing at an alarming rate, the problem of high yielding seed varieties (taking into account climatic conditions of Africa, the characteristics of the soil and the related methods of cultivation) remains to be solved. It is true that research and development constituted the foundation of the "Green Revolution". But it is also true that for such research and development to be useful, it has to be "area specific". Whatever else we may say, tropical agriculture is circumscribed by ecology.

### Crop damage

The Brandt report stated that "most African countries, but especially the Sahel zone (as well as Sudan, Ethiopia, Somalia and Tanzania), have much of their farming within semi-arid tropics where vapour transpiration is exceedingly high and rainfall can vary by 40 percent from year to year. . . Without irrigation and water management, they are afflicted by droughts, floods, soil erosion and creeping deserts, which reduce the long-term fertility of the land. Disasters such as drought intensify the malnutrition and ill-health of their people and they are all affected by endemic diseases which undermine their vitality".

Similarly, "farmers' crops are in constant danger of being devoured by insects and pests. Nature is hostile to thousands of species that are hostile to the endeavours of farmers. . ." said Theodore W. Schultz in his 1980 Nobel lecture. The generally backward technology of cultivation can also be attributed to the high incidence of diseases (especially trypanosomiasis) that kill draft animals; the poor soils and scanty and uncertain rainfall that have discouraged land-intensive, settled agriculture in many parts of the region and problems of irrigation stated a 1978 World Bank report.

Finally, Andrew M. Kamarck, in the 1979 FAO review, concluded that "the proper contrast is not 'North-South' but 'rich temperate zone-poor tropics' . . . The refusal to recognize the different conditions faced by countries in the tropics, first by the colonial powers