

Review Article

Northwest African and Middle Eastern food and dietary change of indigenous peoples*

Harriet V Kuhnlein PhD, Timothy Johns PhD and the IUNS Task Force on Indigenous Peoples' Food Systems and Nutrition

Centre for Indigenous Peoples' Nutrition and Environment (CINE)

This paper describes cultural and ecological characteristics of Northwest African and Middle Eastern food patterns and discusses the forces contributing to rapid dietary change. Focus is given to indigenous/ tribal/ ethnic/ minorities in these areas with contributions to definitions of these groups, the extent of their diversity, and the importance of their traditional knowledge of local food resources. Urbanization, particularly for those facing extreme poverty in the urban environment, is recognized as a significant force to dietary change and consequent poor nutrition, especially for children. Examples of food systems are given for the coastal zone of West Africa and the semi-arid and desert zones of North Africa and the Middle East, also including the food system of Pharaonic times. Trends in dietary change are presented as data derived from FAO Food Balance Sheets.

Key Words: indigenous peoples, tribal peoples, ethnic minorities, indigenous food, Northwest Africa, Middle East, dietary change, traditional food systems

Introduction

This paper was prepared as a contribution to a symposium sponsored by the International Union of Nutritional Sciences (IUNS) and entitled, "North and West African Foods and Health." The symposium was held in Marrakech, Morocco, on February 08, 2003. The paper originates from the IUNS Task Force "Indigenous Peoples' Food Systems and Nutrition."

The objectives of the Indigenous Peoples' Food Systems and Nutrition Task Force are: to review and consider, as comprehensively as possible, indigenous food systems; to represent the nutritional advantages and disadvantages of the food systems; and to engage Indigenous Peoples in the scientific work of the International Union of Nutritional Sciences.¹

This paper gives a definition of "Indigenous Peoples" in the international setting, describes certain aspects of "traditional food systems of Indigenous Peoples," and applies this understanding to North and West Africa and the Middle East. We call attention to the vast resources of knowledge of indigenous food species that exist in the region, and highlight data that demonstrate issues of changing food use, dietary change, and the potential health consequences this implies for Indigenous Peoples living in the region. We further underline the impact of ecological and cultural differences in food system environments, food diversity, and urbanization.

Who are Indigenous Peoples?

Four criteria are often applied under international law and by the United Nations Human Rights Commission to define Indigenous People:

- 1) residence or attachment to traditional habitat, ancestral territories and natural resources (such as food);
- 2) maintenance of cultural and social identities separate from the mainstream or dominant societies and cultures (such as language);
- 3) descent from population groups present in a given area, often before modern states were created and borders defined;
- 4) self-identification as being part of a distinct indigenous cultural group.

The United Nations Development Program notes that no single definition exists that captures the diversity of Indigenous Peoples in the world today. Self-identification as indigenous or tribal is usually accepted in combination with language, geographic location or concentration. Further, indigenous groups have a respect for the co-relationship of the land, nature and spirit.²

Indigenous Peoples may also be called "tribal people," "small minorities," "ethnic groups," "small nationalities," "native peoples," "First Nations," "autochthonous peoples," "aboriginal people," or "Founding Nations." Definitions derived from the UN Economic and Social Council Commission on Human Rights include description as people who conform more to their own cultural,

Correspondence address: Harriet V.Kuhnlein, CINE, Macdonald Campus of McGill University, 21,111 Lakeshore Rd, Ste Anne de Bellevue, Quebec H9X3V9, Canada
Tel: + 514-398-7671; Fax: + 514-398-1020
Email: harriet.kuhnlein@mcgill.ca

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social and economic traditions than to that of the majority in a country in which they now form a part.³ For the purposes of this manuscript, we recognize that in Africa the terms "tribal" or "ethnic minority" are more regularly used. However, throughout this paper we chose to use the term "Indigenous People" as an over-arching term relevant to the global nature of the Task Force.

Estimations of the numbers of Indigenous Peoples in the world today vary widely, depending on the purpose of the use of a definition. From 266 million to 660 million people have been estimated as being "indigenous."^{4,5} Within the regions of North and West Africa and the Middle East (referred to as "the region"), we consulted with the World Directory of Minorities (1997)⁶ to estimate the total numbers of indigenous/tribal/ minority/ ethnic peoples as being roughly 185 million people (approximately 31% of the total population), contained in approximately 180 groups.

With such a diversity of cultural populations in four climatic zones (tropical humid, warm semi-arid, desert, and transitional semi-arid), it becomes obvious that there is a great wealth of information on food species and food systems known and used by these people. The recognition of this diversity contained in ecological zones and cultural areas is a primary objective of this paper.

Focus on rural-dwelling Indigenous/Tribal/Ethnic groups

Rural-dwelling Indigenous People living close to the land, and taking a majority of their food resources from the local environment, hold the ecological and cultural information on species availability, their harvest and storage potential, and general acceptability to age and gender groups within the culture. When rural people move into urban environments, they often cannot obtain their traditional food resources, and frequently fall into poor health as a result of malnutrition. Thus, for purposes of this estimation of diversity in subsistence food systems derived from different cultures in the region, we estimated the extent of urbanization of each country using information from publications of UNICEF (1998)⁷ and the Standing Committee on Nutrition (2002).⁸ The overall percent of urbanization of countries in the region is estimated to be 53%, the average annual urban growth rate at 4.7%, and the average % of underweight children in the region at 19%.

The corollary of these estimations is that the percent of the overall regional population of 596 million people living in rural areas is 47%. Therefore, if the assumption is made that an equal proportion of indigenous/tribal/ minority/ethnic peoples relocate to urban areas at the same annual rate of 4.7%, the number of Indigenous Peoples in the roughly 180 cultural groups remaining in rural areas in the region is approximately 87 million, but steadily declining. This is still a large number of people to consider the benefits of retaining cultural food resources from local environments, and from whom the diversity of food resources in the region can be understood.

Nutrition and health implications of leaving rural areas for Indigenous Peoples

When Indigenous Peoples move from rural to urban environments, there are several simultaneous aspects to consider in the loss of species diversity from the rural circumstance compared to the urban circumstance. First, there is loss of small scale agriculture and the employment it brings, as well as decline in diverse food resources available to households. Secondly, there is loss of wild traditional species harvest. These losses are generally not compensated in the urban circumstance by other means to improve species diversity and adequate nutrition.

In the urban environment, especially for the majority of people who are living in poverty, dietary energy needs are met with inexpensive commercial food supplies often imported from the global market. This results in dietary simplification with low nutrient density. If urban migration continues and circumstances of poverty are not ameliorated in reasonable time, malnutrition among the poor increases.

On the other hand, for families with moderate employment income in the urban areas, the situation turns to over consumption of low nutrient-dense food and obesity. This is especially so when urban migrants do not have access to their food system for which they have cultural knowledge, understanding of nutrition potential of market food is poor, and education levels are low.

For all levels of the poor in urban environments who either do not, or cannot, access nutrient rich food, diets become monotonous and poor in micronutrients. This region is comprised of nations most of which fall below the median of mortality rank of children under 5 years of age, and who have nations with documented underweight in the highest global level (up to 40%).^{7,8}

Examples of food systems in ecological zones

The North and West Africa and Middle East region contains nations in four climatic zones: tropical humid, warm semi-arid, desert, and transitional semi-arid. Each has a wealth of diversity in indigenous food system species derived from local environments. In considering a definition of indigenous food species used by local people (Indigenous Peoples food or traditional food system), the important concepts of origin of the traditional knowledge to use these resources rest in local ecologies and cultures. Aspects of climate, rainfall, seasonality, soils, species diversity, extent of urbanization and environmental integrity define the manner in which populations meet their needs. Culture defines acceptance and use of species as food within age and gender groups and technologies for harvest, preservation and preparation. Both ecology and culture define the overall availability of food to communities and families.

The coastal zone of West Africa

Smith (1998)⁹ described the major indigenous food species from the early to mid-1900's in Benin, Cameroon, Cote d'Ivoire, The Gambia, Ghana, Guinea, Liberia, Nigeria, Senegal, Sierra Leone and Togo. Table 1 gives a brief summary of the major resources, most of which are

still found and used by rural peoples in these countries. However, some species noted by Smith are no longer commonly found, such as the African yam bean and the African nutmeg (Fig. 1). In contrast, local millets and sorghum are still widely used. Using Senegal as an example of dietary change during the last 30 years, five food categories are summarized as percent of energy per person per day (Fig. 2).¹⁰ It can be seen that locally grown grain species of millet and sorghum have been steadily declining as a major source of energy in favour of increasing use of white rice, an imported staple. Simultaneously, there is an increased use of vegetable oils and wheat, and a rather steady use of animal source food.

Table 1. Major indigenous food species in the coastal zone of West Africa – early to mid 1900

Cereals: millet, sorghum, fonio, rice, maize (white and yellow)

Legumes/pulses: cowpea, b. groundnut, geocarpa bean, African yam bean, lima bean, pigeon pea

Seeds/nuts: groundnut, bambara nut, cashew, coconut, dika, kola, melon seed

Protein: goat, fish, shellfish, beef, pork, chicken, guinea fowl, pigeon

Tubers/roots: guinea yam, 3-leafed yam, coleus potato, false yam, rizga, cassava, sweet potato, cocoyam

Vegetables: okra, gourd, fluted pumpkin, tomato, yergan, plantain, amaranth, many wild/cultivated leaves

Fruits: watermelon, baobab, tamarind, akee, African breadfruit

Spices: roselle, pepper, African nutmeg, locust bean, ginger

Oils : oil palm, shea butter, sesame, groundnut oil

Source: Smith, 1998⁹

Sub-Saharan Sahelian zone

Staples in Sahelian diets are derived from millets, sorghum and other traditional cereals. The Hausas in the region of Filungue, Niger, provide an instructive case-study of the nutritional value of the whole of these traditional food systems. As documented in a study of availability of local food to address vitamin A deficiency,¹¹ this society includes excellent sources of vitamin A from food from many kinds of domestic animals and agricultural activities. These included liver of cow, sheep, goat and camel, eggs, and milk of cow and goat. Rich sources of carotene include pumpkin, carrot, mango and a wide variety of leafy green vegetables: baobab leaves, horseradish tree leaves, red sorrel, amaranth, cowpea leaves, young jute leaves, sweet potato leaves, cassava leaves, tamarind tree leaves, senna, and the leaves of several unidentified wild species. In this area where vitamin A deficiency is recognized with traditional knowledge, common street foods include “kupto” and “dambo,” prepared from boiled leaves of various kinds with oil, onion, spices, salt, and containing millet, sorghum and often the protein rich peanut meal.

Figure 3 presents FAO Food Balance Sheet Data¹⁰ that demonstrates the gradually increasing use of refined imported rice and vegetable oil. During the same period, use of sorghum and animal source foods has declined, with both millet and sorghum declining dramatically during the last ten years. Niger is a nation with rapid urbanization (5.8% per annum), ranked first among 189 nations⁷ for mortality of children under 5, on record for 40% of children underweight, and with a tribal/ethnic population of close to 50%. Rural traditional knowledge of sources rich in vitamin A could be promoted to enhance nutritional status of children in Niger.

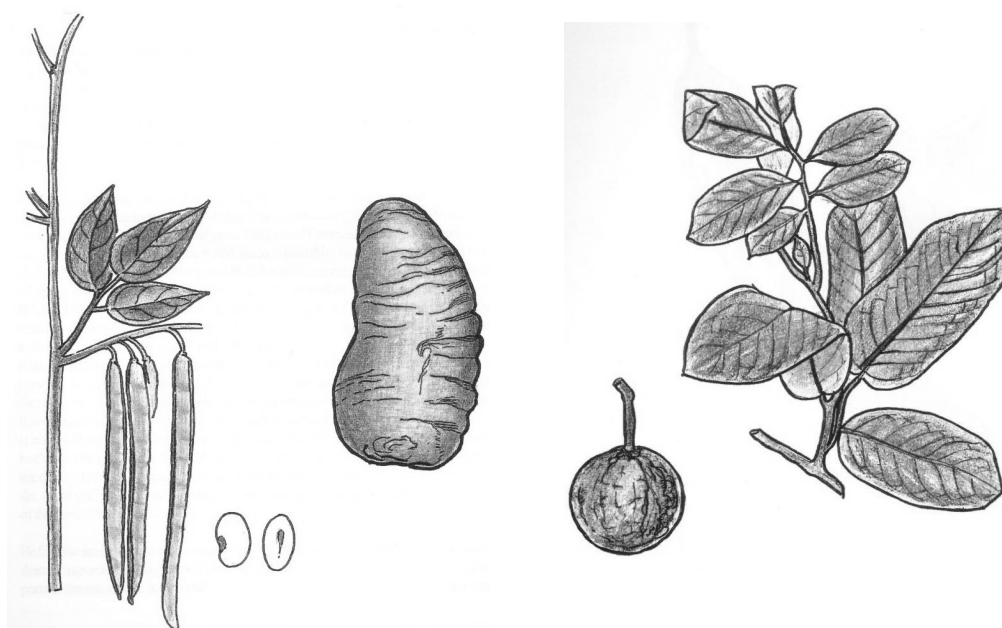


Figure 1. African yam bean and African nutmeg: two indigenous species infrequently used today. Reproduced with permission from Smith 1998⁹

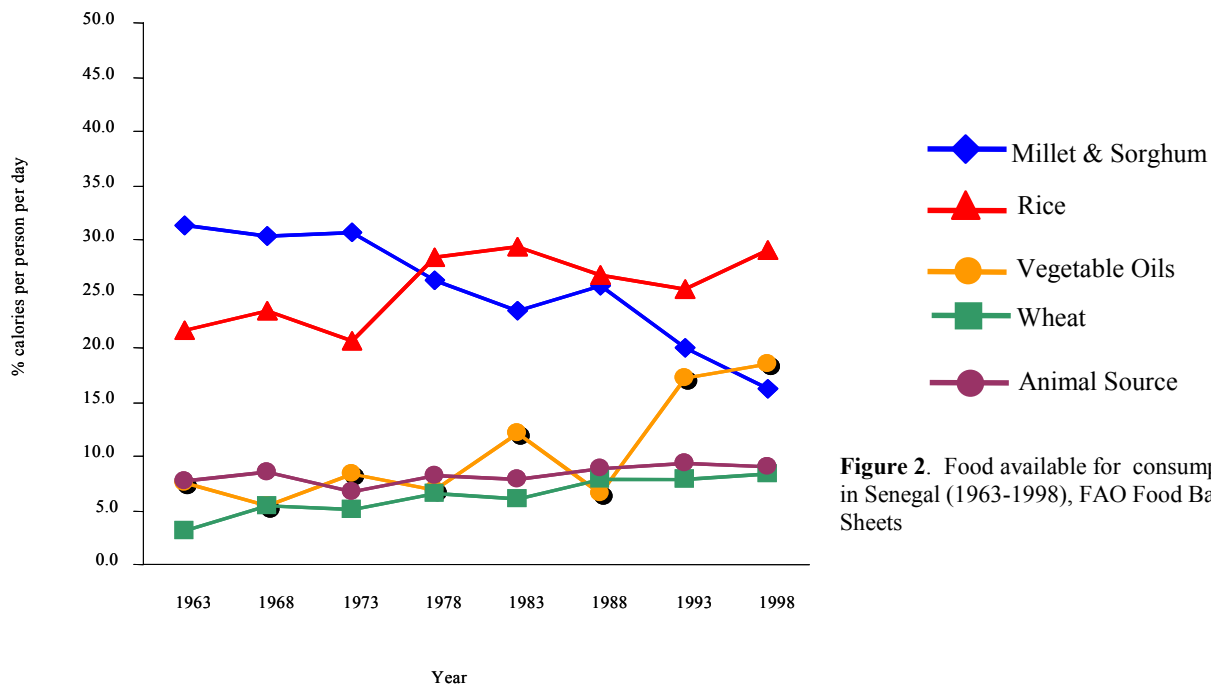


Figure 2. Food available for consumption in Senegal (1963-1998), FAO Food Balance Sheets

Semi-arid and desert zones of North Africa and the Middle East

Major contemporary food species used in contemporary cuisines of this large area are common for Iran, Iraq, Syria, Lebanon, Israel, Saudi Arabia, Yemen, Egypt, Sudan, Algeria, Libya, and Morocco. Table 2 illustrates generally used major food species, with wheat and rice predominating. A variety of animal species, fermented dairy products, legumes, seeds and nuts are common protein foods. A wide diversity of vegetables, fruits, spices and herbs are used with olive oil, the favorite local oil.^{12,13} Figure 4 is an illustration of dietary change for the region derived from Moroccan FAO Food Balance Sheet data from 1962-2000.¹⁰ The steady increase in use of wheat and decline in use of local barley is evident, with increasing use of vegetable roots such as potato.

Table 2. Major contemporary foods in cuisines of semi-arid and desert countries of the region

Grain: wheat, rice

Protein: lamb and goat, fish, chicken, yoghurt, almonds, pinenuts, walnuts, pistachio, chickpeas, lentils

Vegetables and fruit: eggplant is favored, pomegranate, date, apple, cucumber, okra, lemon, pepper, tomato, string beans, fig, apricot, olives

Spices/herbs: cumin, coriander (dried and fresh), cinnamon, ginger, cayenne, paprika, garlic, dill, mint, saffron, thyme, oregano, marjoram

Seeds: sesame, aniseed, caraway, fennel

Oil: olive

Source: Roden 1974¹⁴, Nickles. 1969¹³

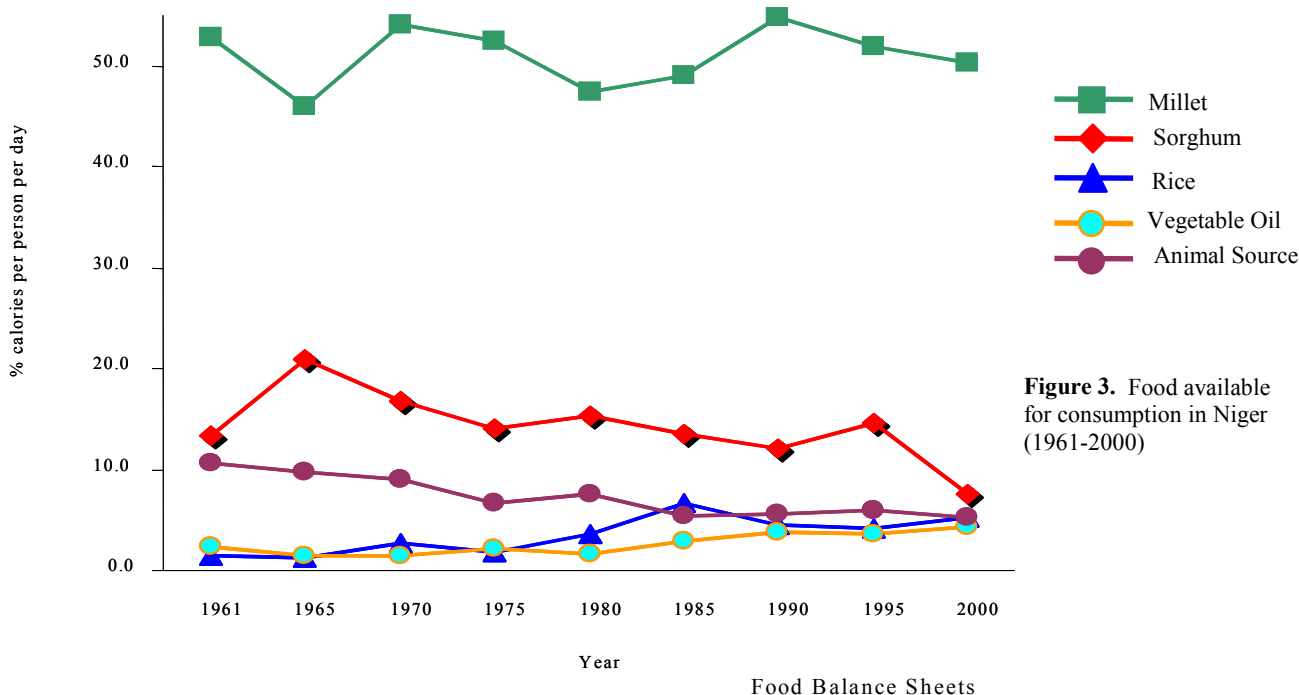


Figure 3. Food available for consumption in Niger (1961-2000)

The patterns of species used has its antecedents in the long history of agriculture in this region. While quantitative data do not exist for food species used in the Pharaonic period in Egypt, scholars have diligently portrayed the broad diversity of food species used.¹⁴⁻¹⁶ Using hieroglyphics and pictographs, the genius and traditional technology for food identification, harvest and preparation are quite astonishing to our contemporary view. Figure 5 shows examples of technology for trapping birds and making wine during the prehistorical period from 3200 to 332 B.C. Table 3 gives an overview of food species diversity mentioned, which includes many items of local agriculture and wild harvest, some of which we are no longer familiar (lettuce seed oil, fig wine, sycamore fruit, etc.). On the other hand, use of several species from this early agriculture period are common

Table 3. Food focus on Egypt of the Pharaohs: 3200 to 332 B.C.

<i>Animal food:</i> beef, pork, sheep, ram, goat, wild species - especially the equids, camel, dog, various wild and domestic birds and eggs, Nile fish, clams,
<i>Grains:</i> wheat and barley (many varieties)
<i>Oils:</i> sesame, olive, palm, lettuce seed, safflower
<i>Beverages:</i> water, beer (wheat, barley), wine (grape, date, pomegranate, fig), milk for children
<i>Vegetables:</i> wild marsh plants (lotus, etc.), garlic, onion, turnup, lettuce, purslane, artichoke, fava beans, chickpeas, lentils, lupins, cabbage, many others
<i>Fruits:</i> apple, cherry, plum, dates, peach, pear, pomegranate, watermelon, sycamore, grape, jujube, fig, olive, melon
<i>Herbs and spices:</i> anise, caper, cinnamon, coriander, cumin, dill, fennel, fenugreek, laurel, marjoram, mint, mustard, pepper, rosemary, thyme. Salt. Honey.

Darby *et al.*, 1976^{15,16}; Morcos and Morcos, 1977¹⁷

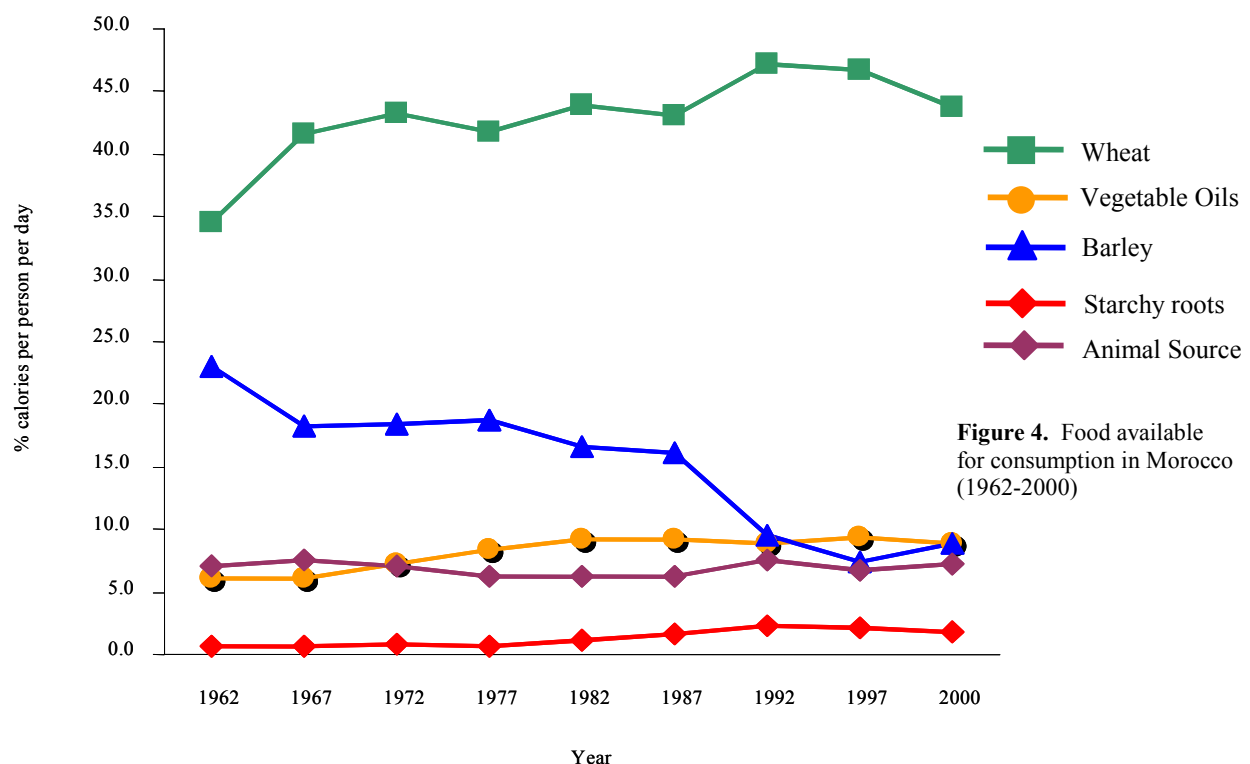


Figure 4. Food available for consumption in Morocco (1962-2000)

and have been adapted for international agriculture and markets (beef, wheat, lentils, olive, etc.)

Discussion and Conclusions

Several factors limit our knowledge about indigenous food, nutrition and dietary change of the Indigenous (tribal, minority, ethnic) Peoples of North and West Africa and the Middle East. While good agricultural data exist and can be compiled to demonstrate changing patterns of food harvest and commerce, data of similar quality do not exist for population subsets of minorities who are likely the most vulnerable. This is a phenomenon noted by the World Health Organization (WHO, 2002).¹⁷

In identifying nutrient-rich food resources, both to address nutrient deficiencies and the emerging problem of dietary-based non-communicable disease,¹⁸ the best areas to look for these resources is among the cultural groups living in rural areas. Finding success stories of good health with use of local resources (such as the use of kupto and dambo among the Hausas in Niger) is key, and needs to be tied to the indigenous local knowledge of traditional food systems. Research into this important field must include enhancement of the limited food composition data for local food species. With this critical information, health promotion activities among the most vulnerable groups using local food resources can be developed and accelerated to alleviate malnutrition, and stem the transition to use of imported foods that are of inferior nutrient density to local species.

The broad ecological zones and many cultural groups that comprise this region contain a vast knowledge of local food resources. A systematic effort should be made to understand the local knowledge, the food resources located there, and to use this information to improve

A



B

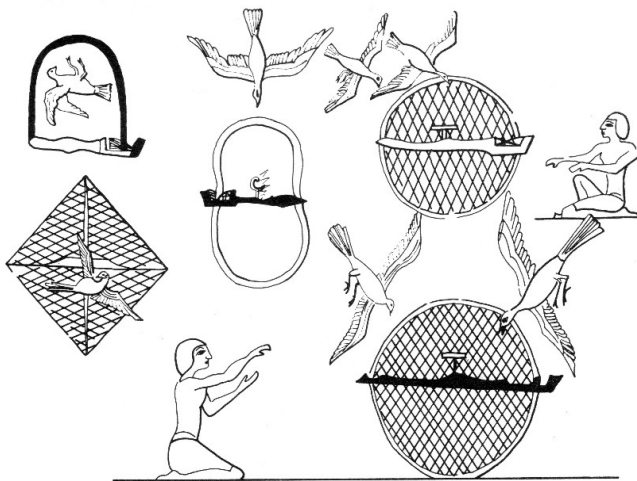


Figure 5. (A) Expressing the juice of grapes in a bag tied at one end, and twisted at the other. Reproduced from Caillaud (1831), plate 5A.¹⁹ (B) Egyptian bird traps in Pharaonic Egypt. Redrawn from Wilkinson (1878) Vol 2, p 103, Fig 362.²⁰ Reprinted from Darby *et al*, 1977¹⁴ with permission from Elsevier.

health of those most in need in both urban and rural settings. The current trends in dietary change as evidenced in only the broadest terms by plots of selected species from FAO Balance sheets show that food diversity is narrowing with time and economic change, and that many promising food species are threatened by environmental deterioration and lack of use. Loss of cultural ties, traditional food use knowledge and the actual food resources occurs with urbanization; the transition to higher energy consumption of food that has lower nutrient quality will lead inevitably to greater obesity and higher levels of noncommunicable diseases among the populations of the region.

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