

Healthy produce, people and environment

Editorial

Some people have long been aware of the link between the food we eat and the effect it can have on our health, while to many others - be they farmers or scientists, urban or rural inhabitants - the connection is not so obvious. The fact is that our health is influenced by the water we drink, the air we breathe, by many physical and non-physical factors in our environment, and by the quantity and quality of the food we eat every day. The quality of our food is largely determined by the way it is grown or produced. Health and agriculture therefore are linked though they are identified as separate disciplines or sectors.

Developments in the agriculture sector have significantly influenced the choice of crops, the way they are grown and the resource use patterns. Traditional food crops have been replaced by income generating cash crops, resulting in lower access to nutritious food. The water intensive cash crops requiring higher use of pesticides and fertilizers has led to depletion of ground water levels and contaminated food and drinking water. Indiscriminate and unsafe practices while using chemicals has been hazardous to human health. For instance, Indira Devi (p. 28) reports that skin and eye related problems are the most prevalent among farm workers using pesticides. All these together have contributed to degradation of environment, production of unsafe food and ultimately deterioration of human and animal health.

As an integrated approach, LEISA considers the ecological, economic and social aspects of agricultural development. A LEISA system focuses on mixed farming, preference to traditional varieties, recycling of resources and lesser dependence on external inputs contributing to production of safe produce, cleaner environment and better health.

Healthy produce

LEISA focuses on increasing on-farm diversity, on mixed systems with animals, annual crops and tree components, and on the use of natural enemies rather than chemical pesticides to control pests and diseases. Extensive knowledge of practices and processes involved in the maintenance of ecosystem services enables farmers to manage the whole farm to produce a wide range of quality, safe products. Establishment of integrated and sustainable farming systems contributes to long term food security and increased productivity, which contributes to health and general well-being.

Traditional crops or local crops are more hardy with an ability of coping with the adverse climatic conditions. Inclusion of these crops into the cropping systems will therefore produce the required **food security**, particularly to those communities who live in fragile ecosystems. Farmers of Oaxaca (Joshua, p.8) revived Amaranthus, a crop which their forefathers grew, as it was drought, disease and pest resistant and a rich source of nutrition. Similarly, the tribals in Orissa, with the help of MSSRF, started cultivating millets and established seed banks to continue producing millets (Swain and Parida, p.6).

Alternative farming practices in conserving soil moisture, organic ways of enhancing soil fertility and biological ways of managing



Photo: S Jayaraj

pests are helping communities to use lesser chemicals and lower their costs of cultivation. The Monpa tribes got back to their traditional systems of cultivation, included diverse cropping systems and are reaping benefits in terms of enhanced soil fertility and increased nutrition (Mihin Dollo, p.12).

LEISA is all about using local resources and getting the most out of them by recycling across various uses. Efforts of using plant biomass and animal excreta for manurial purposes are well known and documented. Instances of converting human waste rich in nutrients to organic manure that could enrich the soil leading to higher productivity has been tried successfully by Sasidharan Nair (p.23).

Healthy people

The amount of food we eat is one part of the problem; the quality of food is just as important. Around 2 billion persons suffer from what is called “hidden hunger”, characterised by insufficient intake of vitamins and minerals. This can cause various diseases, from blindness to anaemia, and it reduces people’s general resistance. Increasing the range of crops, vegetables and fruits, and including under utilised, wild or traditional species, can definitely contribute to improved nutrition. Hira Jhamtani (p.10) and Swain and Parida (p.6) describe the efforts in introducing traditional crops and alternative farming practices, providing the communities the much needed food and nutrition security.

While improved nutrition can help prevent us from getting ill, herbal, medicinal and aromatic plants are usually used to treat existing health problems. Throughout history, wild plants have provided the main ingredients for all types of medicines, and knowledge about the use of such plants has helped to sustain populations for millennia. Nowadays, although synthetically produced drugs and medicines have become widely available, it is increasingly acknowledged that locally produced herbal medicines can be a very effective and much cheaper alternative to “modern” medicines. There are many medicinal plants, which can easily be grown as home gardens (Unnikrishnan, p.17) and used domestically for common complaints at the local level. Medicinal plants can easily be incorporated into the farming system. At the same time, there are also increasing opportunities for farmers to cultivate medicinal products commercially as in recent years the demand for natural remedies has grown considerably – both locally and internationally.

The link between health and food, and the ways in which food is being produced, has become increasingly noticed in urban areas. With increased urbanisation, globalisation and changing lifestyles, consumers are exposed to “fast foods” and to processed, treated or stored foodstuffs of low nutritional value.

Increased awareness among urban consumers has brought new opportunities for food producers, leading, for example, to growing markets for organic, green and fair trade. With shrinking cultivable land around urban centers, and increasing dependence on food brought in, people are following the “grow your own” concept using limited urban space. Urban gardening is thus becoming popular in many places, as is shown by Unni Krishnan Nair (p.13).

Certainly there are many health issues, which cannot be directly traced back to agriculture. One such issue is the HIV/AIDS pandemic. It is recognized that rural-urban migration is identified as one of the causes of prevalence and spread of HIV/AIDS. However, many people living with HIV/AIDS depend on agriculture as their main source of livelihood, and the interactions between malnutrition, poverty and HIV/AIDS are becoming increasingly well-known. The World Health Organisation considers poverty to be “the world’s most ruthless killer and greatest cause of suffering”, recognising that poverty can increase the incidence of, and suffering caused by HIV/AIDS, while HIV/AIDS in turn worsens poverty and increases inequality. Agriculture-focused organisations as well as organisations principally working around health issues are seeing this link very clearly in recent years, working to address food security and nutrition. These initiatives include the promotion of home vegetable gardens, poultry keeping and conservation agriculture.

Finally, we must consider the enormous health threats related to the use of pesticides, fertilizers, and herbicides in agriculture. This is one area where the shift to low input systems and the use of organic manure and ecological pest management can have an immediate positive effect on health. This is clearly presented by Sherwood, Cole and Murray (p. 26), who make a strong case for banning the most toxic products. As these authors point out, highly toxic pesticides are easily available, even though they are directly associated with nervous system and mental health problems. More alarmingly, health problems are not only seen in those who apply these products, but among the entire family. These in turn, increase the health expenditure of families resulting in a welfare loss to the nation (Indira Devi, p.28). Further, having easy access to extremely toxic products is also linked to higher suicide rates.

Healthy environment

The relationship between health, agriculture and a clean environment can be seen in different ways. Water, for example, is essential for agriculture, while access to clean water is vital for human health. Agricultural production demands vast amounts of water, competing with the people who need it for daily life. Conventional agriculture is one of the major polluters of the available water resources, contaminating drinking water supplies with surplus nutrients and chemicals. At the same time, the use of waste water in agriculture is an increasing concern, as it can cause serious health problems for consumers.

Another major concern is the untreated wastes, be it human or otherwise, which is a source of ill health. In some regions, even today, crop wastes are burnt leading to environment pollution. Instead these could be converted to organic manure, thus recycling nutrients back to the soil. Also, enormous quantities of human waste otherwise polluting the environment, could be put to productive use by converting it into vermicompost (Nair, p.23).

Women and health

As health is a central part of a family’s well-being, there is an important social dimension to be considered. On a daily basis,

meal preparation, feeding the family, cooking, and the allocation of food is often done by women. On the production front too, women often consider nutrition aspects while making crop choices. They also have important responsibilities in other health and hygiene related matters. Ensuring that women and men are sensitized about nutrition, health and sanitation, while recognizing their respective roles and responsibilities, is an important step in improving family health and nutrition.

Another link can be seen in the way women cook - using wood, dung and crop residues as fuel every day. The availability of firewood or fuel is a major issue and there have been many agricultural initiatives focusing on the production of firewood and related ecosystem management. But, comparatively, less attention has been paid to finding alternatives, which also address issues such as smoke inhalation. Women who spend hours in enclosed spaces breathing in smoke are at serious risk of respiratory and cardiovascular diseases; in many rural areas, respiratory diseases are one of the biggest causes of death. Gram Vikas (p.22) helped women in Orissa by introducing biogas as a cooking fuel by recycling cow dung. With the introduction of biogas units, households enjoyed cleaner environment and got rid of respiratory problems associated with the smoke in the kitchen.

Future challenges

There are a number of major health challenges facing the world today. Some of the bigger issues are linked to the current state of agriculture. For example, malnutrition is common in many rural areas where agriculture is the basis of the populations’ livelihoods, and their effects are felt acutely. The ever-expanding population means an increasing demand for nutritious food and clean water. In many ways, the health of producers and consumers is related to local production systems, to the end product, and also to wider issues such as access to and control over land, water and services. As these issues are inextricably interlinked, the responses will also need to be integrated, drawing on the expertise of both agriculture and health sectors. By looking at some of the major areas of cross-over, we can see where opportunities exist for succeeding with an integrated approach to addressing health through agriculture.

Although many encouraging initiatives are appearing, there are still many questions to be answered. Do agricultural projects consider the health implications of their interventions? In which ways do researchers integrate health and nutrition considerations into agricultural research projects? Getting different sectors and departments to work together will be one of the biggest challenges. While millions of people rely on small-scale agriculture for food, fuel, shelter, and fibre, it can be argued that a more integrated approach is not only necessary, but long overdue.

The articles in this issue show how human health is being improved through good natural resource management and maintenance of ecosystem health. On a larger scale, in order to address poverty reduction and achieve the Millennium Development Goals, the synergies between agriculture and health should be taken advantage of. This calls for innovative approaches, integrated processes, inventive thinking and novel partnerships - the challenge for LEISA practitioners everywhere. ■