E

November 2013

منظمة الأغذية والزراعة للأمم المتحدة	联合国粮食及农业组织	Food and Agriculture Organization of the United Nations	Organisation des Nations Unies pour l'alimentation et l'agriculture	Продовольственная и сельскохозяйственная организация Объединенных Наций	Organización de las Naciones Unidas para la Alimentación y la Agricultura

FAO Regional Conference for Asia and the Pacific

Thirty-second session

Ulaanbaatar, Mongolia, 10–14 March 2014

Agenda item 9

State of food and agriculture in Asia and the Pacific region, including future prospects and emerging issues

Table of Contents

I. Introduction

1. The Asia and Pacific region[1] has witnessed tremendous changes over the past few decades. Rapid economic growth, especially in Asia (but much less so in the Pacific) has led to a profound structural transformation of the economy, with the share of agriculture in GDP declining in all countries of the region. At the same time, most countries have experienced improved agricultural growth over the past decade (compared to the 1990s). By some measures, food security has improved, as the number of undernourished has steadily declined in the region during the past two decades (see the section on "Food and nutrition security" for more details). Poverty rates have declined sharply, although the record on inequality is more mixed – it has improved in some countries but worsened in others. In some countries, especially in South Asia, access to improved sanitation facilities (which helps to promote better food utilization by the human body) is still at low levels and is currently inadequate to ensure sustainable food and nutrition security. Future prospects for improved food security will clearly depend on the ability of governments to mobilize resources for the provision of public goods that have been shown to reduce poverty, improve food security and nutrition, and increase agricultural growth.

2. The continuing transformations and changes have led to a wide range of critical and emerging issues in the region. This document will focus on several particularly high priorities that have been identified by member nations: building inclusive and efficient food chains in Pacific Island countries (PIC); revitalizing the coconut sector for increased resilience and food security; sustainable intensification of aquaculture; livestock production: achievements, problems and impact on human health; and the future of family farming. Before discussing these emerging issues, however, the document will first provide an update on food and nutrition security in the region.

II. Food and nutrition security

3. The most recent estimate of the number of undernourished people in the world declined from 868 million in 2010-12 to 840 million in 2011-13.[2] This represents further progress, although at a rate insufficient to reach either the World Food Summit target or Target 1C of the first Millennium Development Goal (MDG) at the global level.

4. Significant reductions in both the number and the proportion of the undernourished have taken place in most countries of Asia, particularly in Southeastern and Eastern Asia. Progress in Southern Asia has been slower compared with other parts of the continent. With a decline from 31.1 to 10.7 percent, the most rapid progress was recorded in South Eastern Asia, followed by Eastern Asia. The Asia-Pacific region as a whole appears to be on track to achieve the MDG hunger target, with an overall reduction from 24.1 percent in 1990/92 to 13.5 percent in 2011-13. Indeed, in Southeastern Asia, the MDG target has already been reached.

5. Overall, the PIC are making progress at reducing the proportion of undernourished, but at a rate too slow to meet MDG Target 1C. Several countries, however, have already reduced the proportion of undernourished to less than 5 percent: Fiji, French Polynesia, New Caledonia and Samoa. In some countries, the percentage of underweight children is still at high levels, as in Papua New Guinea and the Solomon Islands. Lack of data is an issue in several countries. Better data are urgently needed in order to better inform policy-making.

6. There have also been rapid reductions in the percentage of children under five years of age who are stunted (low height for age), from 42 and 61 percent in 1990 to 12 and 38 percent in 2012 in (i) East Asia and the Pacific and (ii) South Asia, respectively. These rates of decline are more rapid than those for undernourishment.

[1] The Asia-Pacific region is very diverse. The key issues differ from one part of the region to another, from one country to another and even within countries. This reality makes it difficult to prepare an overview document of this sort. Whenever possible, these intra-regional differences are pointed out on an issue by issue basis, but it is not possible to be comprehensive in this regard.

[2] Paragraphs 3-7 draw heavily on FAO's 2013 State of Food Insecurity in the World report.

7. The relatively rapid progress at reducing undernourishment in Asia and the Pacific means that its share of the world's total has declined from 74 percent in 1990-92 to 66 percent in 2011-13. Nevertheless, the Asia-Pacific region is still home to nearly two-thirds of the undernourished in the world.

8. Health and nutrition has other dimensions besides undernourishment, such as micro-nutrient deficiencies and overweight/obesity (these three are referred to as the triple burden of malnutrition).[3] For example, there has been little progress at reducing vitamin A deficiency in Asia: It declined from about 37 percent in 1990 to just 32 percent in 2007, a very slow rate of decline. It is less of a problem in the PIC, however, where incidence stands at just 12 percent. Progress has also been quite slow at reducing the incidence of anaemia and iodine deficiency in Asia, prevalence of which currently stand at 50 and 30 percent, respectively. Prevalence of these two conditions is similarly high in the PIC, at 54 and 32 percent.

9. Micronutrient deficiencies impose significant costs on society. The median total economic loss due to physical and cognitive impairment resulting from anaemia was estimated at 4 percent of GDP for ten developing countries, ranging as high as 8 percent in Bangladesh. This study also suggested that while the productivity losses associated with anaemia are higher for individuals who must perform heavy manual work, they are also serious for those doing light manual work and cognitive tasks. Vitamin and mineral deficiencies have been estimated to represent an annual loss of between 0.2 and 0.4 percent of GDP in China; this represents a loss of US$2.5–5.0 billion. In China, actions to solve iron and zinc deficiencies would cost less than 0.3 percent of GDP, but failure to take action could result in a loss of 2–3 percent of GDP. For India, it has been estimated that the combined economic cost of iron-deficiency anaemia, zinc deficiency, vitamin A deficiency and iodine deficiency amounts to around 2.5 percent of GDP.

10. Overweight (body mass index, or BMI, greater than 25) and obesity (BMI greater than 30) are emerging problems in the Asia-Pacific region, as they lead to an increased incidence of non-communicable diseases such as heart disease and diabetes that in turn lead to increased health care costs and premature mortality. There are wide disparities across different sub-regions. Between 1990 and 2010, the total disability-adjusted life years (DALYs) lost to these two factors in Asia has more than doubled, while in PIC, it has quadrupled. As a result, the DALYs lost per thousand people due to overweight and obesity are now higher in PIC (67) than in any other developing region of the world. On the other hand, the DALYs lost per thousand people in Southern Asia are just 11, the lowest figure for any developing region (the same level as in Eastern Africa).

11. The increased magnitude of these problems is undeniably important, but it should not obscure the continued importance of underweight and micro-nutrient deficiencies in the region. The total DALYs lost to these two factors for mothers and children alone is more than double the total lost to overweight and obesity for all adults aged 25 and older. In Asia as a whole, the population-adjusted DALYs lost to underweight alone are more than five times as large as for obesity and overweight. Even in PIC, where the overweight problem is the worst, population-adjusted DALYs are greater for underweight children than for obesity and overweight. In addition, undernutrition in childhood also increases the risks of obesity later in life. Thus, although obesity is an increasing problem, it is important not to lose focus on eradicating undernutrition and micro-nutrient deficiencies.

III. Gender and agriculture[4]

12. Women make essential contributions to agriculture in the Asia-Pacific region. They constitute somewhere between 40 and 50 percent of the agricultural labour force in all subregions except the PIC, where they account for 52 percent. But, depending on the specific country and state/province, they have less access than men to productive resources (including human capital) and opportunities.

[3] Paragraphs 8-11 draw heavily on FAO's 2013 State of Food and Agriculture publication, "Food systems for better nutrition," which can be consulted for more detailed information and references.

[4] This section draws on FAO's 2010-11 State of Food and Agriculture publication, "Women in Agriculture: Closing the gender gap for development."

For example, youth (ages 15 – 24) literacy rates for women in some countries in South Asia are substantially lower than for men. Because women often act as farm managers, lower literacy acts as a drag on agricultural sector growth. If such inequities persist, the drag will become increasingly important in the future with male outmigration and the feminization of agriculture. In order to address this problem and make the agricultural sector as dynamic as possible, key areas for reform include eliminating discrimination against women in access to education, extension, financial services and key inputs; and investing in productivity-enhancing technologies and infrastructure to free women's time for activities that are more productive and involve less drudgery.

IV. Social protection[5]

13. Social protection is becoming increasingly important in many developing countries. It is not a panacea, and it cannot replace a coherent development strategy for the agricultural sector. But social protection can impact smallholder farmers because many social protection schemes operate in rural areas. Often, however, such programs miss opportunities for better linkages with the agricultural sector. It is important for policymakers to foster such linkages and maximize the opportunities for synergies between the two types of policies.

14. Social protection is related to agriculture in several ways. First, it can improve human capital by improving nutritional status, health status and educational attainment. These factors can make for smarter and stronger farmers. Second, it can facilitate changes in productive activities by relaxing credit constraints. Thus, it can allow for the accumulation of productive assets, or help farmers to adopt new crops and new technologies. Third, it gives households a better ability to deal with risks and shocks by providing insurance. This helps smallholders to avoid distress sales of productive assets and premature sale of farm output, and can also permit diversification into new crops, livestock or aquaculture. Taken together, these factors can lead to increased resilience for households and a more dynamic and productive agricultural sector. Thus, it is important that policymakers involved in social protection coordinate with those in agriculture, and vice-versa, in order to maximize the synergies.

V. Status of food security and agriculture in the Pacific Island countries

15. The increased rates of obesity in the PIC noted above are partially linked to rising food import dependency, which in turn are due to rapid changes in dietary patterns among the younger generations that have led to a replacement of traditional locally grown and unprocessed crops such as banana/plantain, breadfruit, cassava, sweet potato, yams and taro with imported, processed cereals such as white rice and wheat flour products.

16. Farming in the region is mostly small-scale and dependent upon family labour. Given significant scale disadvantages, long distances from markets and challenges arising from traditional land tenure structures, there has been limited investment in commercial agriculture and improved agricultural technology. As a result, PIC agriculture is relatively uncompetitive against imports, and struggles to compete in export markets.

VI. Building inclusive and efficient food chains in Pacific Island countries

17. Outside of traditional export commodities such as coffee, cocoa, round logs and copra, vertical integration into global value chains has not been well developed. Some countries in the region have explored high value niche markets, particularly through organic certification and origin branding (e.g. organic virgin coconut oil products, organic single origin cocoa and coffee, *noni*), but difficulties in sustainably scaling up such ventures has reduced their ability to make a significant impact on economies and rural livelihoods. Developing special products and systems of quality control and management and market intelligence that are required to successfully identify and compete in global niche markets have proved extremely challenging.

[5] This section draws on "Strengthening coordination between social protection and agricultural policy," Benjamin Davis, Agricultural Development Economics Division, FAO.

18. The difficult economic geography of the PICs, combined with robust competition from lower-cost countries in Asia, suggests that PIC agriculture might usefully re-orient towards the domestic market in order to improve food and nutrition security. Increasing urbanisation and a vibrant tourism sector is providing greater opportunities for PIC farmers in domestic markets. But retail chain modernisation - as a result of changing consumer preferences and the increasing sophistication of the tourism sector - has introduced higher quality and delivery standards that pose significant marketing challenges to domestic producers. To meet these challenges, greater strategic action and investment by PIC policy-makers is needed in order to create a more conductive policy environment for private sector growth. Pricing policies (taxes and subsidies), land tenure reform, raising sanitary and phytosanitary standards (SPS), alongside investment in marketing infrastructure (e.g., roads, wharves, ports, market houses), are all vital in order to strengthen local enterprises and farm level capacities to satisfy this demand and to slow the escalating pace of food imports.

19. Of course, it is now widely recognized that governments alone cannot create inclusive and efficient food chains, and that governments need to engage with the private sector to agree on what needs to change and who is to do what. Working with the private sector is essential in order to create a "partnership for agricultural prosperity."

VII. Revitalizing the coconut sector for increased resilience and food security

20. In many parts of the region, coconuts are both an important cash crop and one of the most important foods in the diet. Because of its economic importance, there is a need to rehabilitate senile and unproductive palms in the coconut growing countries in Asia and the Pacific. This will require replanting with selected elite local varieties and hybrids. Germplasm exchange and capacity building within PIC to develop capabilities on mass selection techniques, coconut breeding and hybridization should be pursued. To be most effective, these actions need to be guided by an assessment and mapping of productive and senile palms. Given the lack of basic data on the status and extent of coconut resources in many countries, such mapping should be a priority action at the national level.

21. Since coconuts can tolerate salinity and are highly adapted to the coastal zones, priority in replanting may be considered in these areas. Replanting in such areas can prevent coastal erosion and sudden sea water intrusion due to tsunamis and typhoons. Breeding for drought tolerant varieties, high lauric oil content and high nut production are also important priorities.

22. To be resilient in the face of price volatility while ensuring food security and good nutrition, coconut farmers must not depend on copra alone. For example, coconut-based farming system models involving intercropping of food crops, vegetables, fruit trees and industrial crops like coffee and cacao in between the coconut palms, as well as raising livestock like goats, cattle and chicken in the coconut farms must be vigorously promoted and practiced. Coconut value-added products like virgin coconut oil (VCO), VCO-based soap and cosmetic products, coconut sugar, coconut vinegar, nata de coco, young tender coconuts, coconut shell charcoal and activated carbon, coir and coir-based products are some of the products that can provide additional and more stable income for coconut farmers.

23. Technical assistance and guidance must be provided to enable coconut farmers to adopt good agricultural practices (GAP), using local knowledge while at the same time promoting the use of farm waste as organic fertilizers and employing biological control methods, group efforts and farm sanitation to control coconut pests and diseases. Technical assistance on coconut and coconut timber processing technologies, good manufacturing practices (GMP), promotion of quality standards and access to markets should also be provided to ensure the viability and sustainability of value added processing ventures in coconut communities.

VIII. Sustainable intensification of aquaculture

24. Fish and other aquatic animals play an important role in food security and nutrition globally by providing low-cost animal protein, healthy fats and other micro nutrients to people. Fish are particularly important in the diets of people living in Asia and the Pacific. Furthermore, this region accounts for nearly 90 percent of global production.

25. Although aquaculture has a 2,500-3,000 year history, capture fisheries have dominated the global fish supply of fish until recently. Aquaculture started to become a significant source of fish and other aquatic animals in the mid-1980s, and it now provides at least half of the food fish consumed in the world. Given the fact that fish is healthier than many meats, further rapid growth of aquaculture presents significant opportunities for improving food and nutrition security for the poor, provided it is undertaken sustainably. In the Pacific, marine fisheries will remain important sources of income for coastal communities, but several types of fish with low production costs (e.g. tilapia, milkfish, freshwater prawn) have the potential to improve the supply of fish in rural inland areas and contribute to better nutrition.

26. Although the area devoted to aquaculture has increased substantially over the past few decades, most of the growth in production has come from intensification and higher yields per hectare/unit volume water. There are growing concerns about this intensification, however, in terms of both its sustainability and its environmental impact. For example, intensive aquaculture often requires a high rate of water exchange, which puts strong demand on a natural resource that is becoming increasingly scarce. As the prices of cereals and oilseeds rise, feed prices are also rising, which has led to shrinking profit margins because feed is the dominant cost of production in intensive aquaculture systems. Effluent discharge is becoming increasingly regulated, which adds to production costs; or, in the absence of such regulation, it can have severe detrimental environmental impacts. Intensively cultured fish and seafood are also subject to an increased incidence of diseases, and the increased risk can be difficult to manage.

27. In order to meet the challenge of sustainable intensification, governments, in collaboration with the private sector, will need to take action on many fronts. It will be important to establish mechanisms for sharing of aquatic genetic resources, build capacity for fish genetic improvement, and improve understanding of the diseases that can devastate stocks with a view to enhancing the capacity of farmers in managing disease. In the PIC, it will be important to promote community-based small-scale aquaculture, along with regional capacity in self-supply of key inputs, better regulations to stop the spread of transboundary diseases, and better logistics to improve competitiveness.

IX. Livestock production: achievements, problems and impact on human health

28. By 2050, the global human population is expected to be 29 percent greater than it is today; in addition, these people will be substantially wealthier than we are today. Growing populations and rising living standards in developing countries lead to increasing consumption of food, particularly of higher value food items such as fruit, vegetables, and animal source food (meat, milk, eggs and fish). FAO projects that global demand for animal source food (ASF) will increase by 76 percent from 2005/07 to 2050, while global grain demand will increase by 48 percent over the same period (mostly due to the increased demand for ASF, much of which will be grain-fed). Asia, with more than half of the world's population and its rapid growth in disposable incomes, will play a leading role in shaping these developments in the global agri-food sector.

29. Asian animal agriculture is adapting to this tremendous increase in demand in several ways:

- increasing livestock numbers;
- shifting towards shorter-cycle species (i.e. pig and poultry numbers are growing faster than those for cattle, sheep and goats);
- accelerating production cycles (to a large extent due to increased use of concentrate feeds);
- consolidating into larger farming units characterized by high-input, high-output and spatial concentration near feed sources; and
- vertically integrating throughout globalized supply chains.

30. Increases in animal production in intensive livestock systems are the result of selection for improved genetic traits; enhanced management, particularly disease control; and feed rations with a higher nutrient density compared to traditional livestock raising systems. As Asia's agricultural areas

have little potential for expansion, intensification of livestock production has led to major increases in feed imports.

31. The rapid expansion of and structural changes in Asia's livestock sectors have ensured increased supplies of ASF for Asia's growing and more affluent populations. This remarkable transformation has, however, led to several negative developments:

- increased risks to human health from pathogens harboured by animals, either wildlife or livestock themselves;
- environmental degradation, pollution and influx of high levels of drug residues into the environment; emergence of antibiotic-resistant strains of bacteria because of the indiscriminate use of antibiotics; loss of biodiversity and genetic resources; acceleration of climate change through livestock-associated emission of green house gases (GHG);
- the loss and genetic dilution of local and adapted breeds due to import of commercial exotic breeds; and
- exploitation of agricultural labourers and marginalization of smallholder livestock keepers, for whom livestock rearing remains a key livelihood and risk-mitigation activity.

32. Growth in the livestock sector has been led primarily by private investment. This has led to technologies that are suitable for large-scale production, to the exclusion of those that may be more suited for smallholder production systems. Investment has been skewed towards genetic improvement of a few major species and commercial breeds in intensive production systems, but less attention has been directed to improvements in local breeds, which are more likely to benefit smallholders. Technology development towards improving the genetics and nutrition of ruminant animals in the tropical environment and improved supplies of animal feeds (especially those that compete less with human food, such as agro-industrial by-products) can go a long way towards enhancing resource use efficiency and easing pressures on natural resources and the environment.

33. The intensification of agriculture and livestock production does not always amplify health risks, and a number of zoonotic diseases actually decrease as livestock systems intensify and animals are moved into highly regulated environments (e.g. trichinellosis). However, the rapid growth and intensification of livestock production within a poorly regulated environment and without the concomitant strengthening of public health systems not only generates health risks for local populations but compromises regional and global health security, particularly in view of expanding trade and increased human mobility (e.g. HPAI H5N1, H7N9).

34. Large proportions of Asia's vast rangelands are considered degraded due to overgrazing, while animal wastes originating from intensive livestock systems are now a liability to the environment rather than a valued input for soil improvement. Globally, animal agriculture is responsible for nearly half (5.1 out of 10.8 gigatonnes CO_2 -equivalent) of total non-CO_2 (methane and nitrous oxide) GHG emissions, but only 14 percent (7.1 of 49 gigatonnes CO_2 -equivalent) of total anthropogenic GHG emissions (including CO_2).[6] The livestock sector further contributes to climate change by inducing land use changes and associated land degradation reducing CO_2 absorption capacity of vast tracts of land.

35. Last, but not least, rapid expansion of industrial food animal production and marketing systems carries the risk of social exclusion for many small-scale livestock producers and processors due to barriers to entry and non-level playing fields, thereby blocking one of the possible pathways for rural poverty reduction. Furthermore, legal arrangements between large-scale corporate enterprises and private contract farmers tend to be tilted in favour of the former, while hired labour is often subjected to exploitative employment conditions with little if any legal recourse. These problems are just one example of the many threats to family farming, discussed in the next section.

[6] Estimates of emissions come from FAO's 2013 publication "Tackling Climate Change through Livestock: A Global Assessment of Emissions and Mitigation Opportunities."

X. Forests and forestry

36. The region as a whole has been able to reverse deforestation trends and showed positive gains in net forest area over the last ten years, primarily due to the large-scale afforestation programme in China. Forest area has also increased in Bhutan, Fiji, India, Philippines, Sri Lanka, Thailand and Viet Nam, where increased investments in national reforestation programmes have been observed. Efforts to eliminate deforestation and tackle illegal logging, such as through Forest Law Enforcement, Governance and Trade - Voluntary Partnership Agreements, (FLEGT-VPAs), forest certification, and Reducing Emissions from Deforestation and Forest Degradation (REDD+), have shown positive results, however, deforestation rates remain high in many countries.

37. Industrial roundwood production (i.e., timber that is harvested for industrial use in manufacturing wood products, paper, etc., but not including wood harvested for fuel) in the region increased significantly during the past decade. This surge in production has allowed the Asia-Pacific region, led by China and Viet Nam, to emerge as a major producer and exporter of wooden furniture. Non-wood forest products (NWFPs) such as rattan, medicinal plants, fruits, honey, sago, resins, mushroom, sandalwood oil and gums also continue to play important roles in the economic and social well-being of many people in the region. There are more than 150 different types of NWFPs from the region that are traded internationally (in variable quantities).

38. The importance of ecosystem services provided by forests has gained substantially greater attention in recent years. Conservation of biological diversity, protection of watersheds, combating desertification and land degradation, and climate change mitigation and adaptation are key ecosystem services provided by forests. The establishment of large tracts of protected areas and conservation forests, allied with changes in management objectives, including in some cases total bans on logging, reflects changes in society's priorities with respect to forest management. As decentralization and empowerment of local people gain momentum, the region will continue to witness increased demands for participatory approaches in forestry decision making. What is also evident is that challenges in the forestry sector cannot be solved in isolation due to the close linkages between forests and many other sectors. Therefore, future forest management will likely increasingly adopt landscape management philosophies and approaches.

XI. The future of family farming

39. Family Farming (FF) is essential for the sustainability of agricultural, forestry and fishery production systems. Such farms are the dominant mode of farm organization around the world, especially in Asia and the Pacific, and are the context in which important decisions on natural resource management are made. They hold the key to achieving food security not only for themselves, but also for the increasingly large number of families that have left the farm sector for employment in other occupations.

40. In light of this importance, the General Assembly of the United Nations, at its 66th session, declared 2014 as the "International Year of Family Farming" (IYFF) and invited FAO to facilitate its implementation in cooperation with governments, the United Nations system and relevant non-governmental organizations. FAO, in its role as facilitator for the IYFF, is responsible for creating a dialogue space and promoting a partnership that covers all stakeholders, including national and international organizations, civil society, research centres and the private sector.

41. The overall objective of the IYFF is to promote and help guide a broad discussion at national, regional and global levels to increase awareness and understanding about the diverse contributions, challenges and support needed for FF and smallholder farming in eradicating hunger and reducing rural poverty, leading to sustainable development of rural areas and sustainable production aimed at achieving food security.

42. The four specific objectives of the IYFF are as follows:

- support the development of policies conducive to sustainable family farming;
- increase knowledge, communication and public awareness;

- attain better understanding of FF needs, potential and constraints and ensure availability of technical support; and
- create synergies for sustainability.

43. In order to help meet these objectives, FAO will facilitate the flow of information and enable dialogue to develop a common understanding of the importance of FF, including organizing a stock-taking of information related to the role of FF in food security, production and nutrition, management of natural resources, and social stability and employment. FAO will also promote FF through its Strategic Objectives (SO), as well as through pilot activities and networks that will last beyond the IYFF.

44. For example, FAO will undertake work during the current biennium in the following key areas, all of which depend on sound and sustainable family farms:

- eradication of hunger and food insecurity through the promotion of sustainable diets (SO1);
- sustainable intensification and climate change adaptation (SO2);
- helping to create an enabling environment to reduce rural poverty among disadvantaged family farms (SO3); and
- enable more inclusive and efficient food and agricultural systems, including through promotion of the voluntary guidelines on the responsible governance of land tenure, fisheries and forests (SO4).

XII. Conclusions and recommendations

45. In light of the above, the Conference may request FAO to further assist member countries to:

- Continue analytical and policy work to improve food security, as well as build greater awareness of the key issues through campaigns such as the Zero Hunger Challenge, in order to contribute to meeting the MDG hunger goal by 2015 in the Asia and the Pacific region.
- Provide technical analyses and support the development of new policy frameworks so that local agricultural sectors take advantage of domestic markets as a way to promote farm incomes.
- Promote sound data collection, technical and socio-economic analysis that leads to more profitable coconut farming and greater development of value-added coconut-based products.
- Advocate for animal production systems that have been proven to: lead to better environmental outcomes (including the reduction of GHG emissions); create fewer risks to human health; and meet future demand for animal-source foods.
- Increase awareness and understanding of the diverse contributions, challenges and support needed for family and smallholder farming.