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FAO REGIONAL CONFERENCE FOR LATIN AMERICA AND THE CARIBBEAN

Thirty-third Session

Santiago, Chile, 6 to 9 May 2014

Panel 2: Challenges for Sustainable Development and Adaptation to Climate Change in Latin America and the Caribbean (post-2015)

Summary

1. Twenty years after the Rio Summit, Latin America and the Caribbean (LAC) is in a better position to achieve sustainable development given the progress that has been made in reducing poverty, malnutrition and hunger and in increasing food production. However, the region is facing increasingly significant situations of change, including the need to adjust food production and consumption patterns; the ethical commitment to eradicate poverty; the urgency of mitigating emissions and adapting to climate change; the need to increase public and private investment for sustainable development; and the pressing need to combat inequality and food insecurity among its ever-growing population.

2. The countries of the region are bolstering their agro-environmental and social policies, although the combined factors of erosion, deforestation, desertification, climate change, population growth, unequal economic distribution and economic instability pose greater risks to agricultural and food systems and to food security, which is also affected by the high volatility of agricultural prices resulting from the global economic crisis (FAO, 2013).

3. Governance, coordination and coherence of public action for sustainable rural development policies, management of knowledge and innovation and new sources of financing are key elements in meeting the challenges associated with transitioning to the sustainability of agricultural and food systems needed to ensure the food security of present and future generations and conservation of the environment.

Sustainable development in food and agriculture: FAO's vision in the regional context

4. At the Rio+20 Conference, the countries reaffirmed their commitment to achieve the food security of present and future generations and to promote sustainable systems of food production. The Secretary-General of the United Nations urged the international community to join the Zero Hunger

Challenge, encouraging “all partners to scale up their efforts and turn the vision of an end to hunger into a reality”.

5. A world without hunger requires a significant increase in food production to satisfy growing demand and facilitate a more solid transition towards sustainable agriculture. The development and enhancement of agriculture calls for innovative approaches that address the issue of sustainability for the benefit of populations and the environment. Sustainable development requires reconciliation between natural resource conservation and the socially-inclusive economic growth of populations living in the different biomes of the region. This therefore means raising agricultural, livestock, forest and fisheries production while safeguarding the environment.

6. In the regional context, we need to reflect on the opportunities and challenges of countries in achieving sustainability of their agricultural and food systems in conjunction with conservation of the environment, given that environmental degradation directly and disproportionately affects the poor and restricts the resources made available to future generations to avoid hunger and poverty.

7. Latin America and the Caribbean is one of the planet’s richest regions in terms of natural resources and biodiversity. Thanks to the growth of its agricultural and livestock sectors, the region has become one of the “granaries of the world”. However, higher production has generally been accompanied by an intensive use of inputs, soil and water degradation, less biodiversity and deforestation under the application of a market-oriented focus that jeopardizes not only the quality and availability of natural resources, but also the way of life of populations, especially that of the most vulnerable groups such as family farmers, indigenous communities and “forest peoples”. As stated in the progress report on the Millennium Development Goals (ECLAC 2012), the region has not managed to halt the processes of deterioration of the environment and biodiversity, while the poorest populations are faced with higher risks of disaster resulting from climate change and natural hazards.

8. The challenges of sustainable development highlight the need for a more ambitious Post-2015 agenda that reflects the region’s potential, with public policy clearly combining a focus on overcoming poverty and a focus on the environment. The region can grow with higher levels of inclusion, participation and social equality, higher levels of productive investment and greater environmental sustainability and resilience to disasters, if attention is paid to existing gaps. Economic growth is not sufficient alone; also required is a model based on rights, equity and environmental sustainability that recognizes existing limitations.

9. If we are to embark on this path, we need to strengthen policies that promote the valuation of ecosystem goods and services, and the role of agricultural and food systems in the environmental, economic and social development of the rural territory. Strengthening family farming, traditional production systems and short distribution channels are topics relevant to the diversity of local economies and the sustainability agenda. We also need to raise the coordination and harmonization of public policies for sustainable development and the effective incorporation of incentives in public action. This should take the form of practical measures conceived with different sectors and levels of government, with an alignment of policies under a guiding strategic vision that helps dovetail multiple scales and objectives. In sum, achieving sustainability in the region requires a greater capacity of the States to guide the interplay of public and private agents of rural development, through extensive coordination and coherence of public action and participation at all levels.

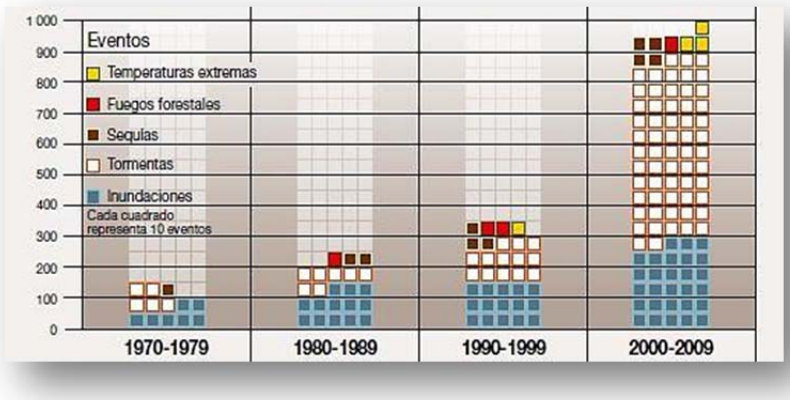
10. Four challenges are put forward for the sustainable development of the region with an agro-environmental perspective, in the framework of eradication of hunger and malnutrition. These four challenges are intimately linked and require the association of many actors, including governments, researchers and academics, civil society and the private sector.

***Challenge 1*: Improving the resilience and adaptation of agricultural and food systems to climate change**
***Challenge 2*: Achieving more with less in food production and consumption**
***Challenge 3*: Conserving, protecting and enhancing the state of natural resources**
***Challenge 4*: Improving and safeguarding rural livelihoods and social welfare**

Challenge 1: Improving the resilience and adaptation of agricultural and food systems to climate change

11. Climate change is a reality in LAC. Extreme weather events have increased in recent decades. The expected pattern of change for LAC is one of greater aridity in dry areas and heavier precipitation in wet areas. The change in climate patterns in the region, and in temperature and precipitation regimes, is expected to disturb agro-ecological systems and heighten risks for producers.

12. The increasing variability of climate is already impacting negatively on all aspects of food security, affecting food production and access and nutrition. Poor producers are more affected by the negative effects. It is estimated that, by 2050, associated productivity losses could reduce agricultural GDP in certain countries of the region by between 3% and 17 % (ECLAC 2012), mainly because of a reduction or loss of harvests.



Evolution of extreme hydro-meteorological events in Latin America and the Caribbean 1970-2010
Source: UNEP/ECLAC/GRID (2010), Graph: Nieves López Izquierdo

(Translator's note: Unable to enter this picture. The text translates as: Events, Extreme temperatures, Forest fires, Droughts, Storms, Floods, Each box represents 10 events)

13. Given this outlook, investment in the adaptation of agricultural and food systems is crucial to ensure the sustainability of food production for future generations. Efforts must also be made to reduce the emission of greenhouse gases (GHGs). The principal sources of emission in the region are the change in land use (46%) and the agriculture sector (20 %) (ECLAC 2012). Five of the world's ten countries with the highest net emissions of GHGs from forest conversion are in South America (Source: FAOSTAT). At the same time, FAO estimates that the region's livestock sector could reduce its GHG emissions by between 18% and 29 % (FAO 2013b) solely by improving practices relating to pasture quality and management, animal health and grazing conditions.

Facing the challenge of adaptation to climate change:

14. Public policies need to identify different of sources of funding for adaptation to climate change. Countries should explore and strengthen options to increase public and private investment in adaptation of the agriculture, livestock, forest and fisheries sectors. Possible sources include payment for environmental services (PES), direct and indirect taxes, credits or reallocation of public budgets (ECLAC 2012). Access to carbon funds should be enhanced at the global level. There is also a need

to bolster forums for the exchange of knowledge and South-South Cooperation on strategies and practices of adaptation of agricultural and food systems.

15. The main challenges in the institutional ambit include strengthening (i) *research, innovation and development* for adaptation to climate change; (ii) *risk management*; (iii) *territorial planning* to manage zones prone to hazards and risks; and (iv) *integrated management of water resources at watershed level*. At the technical level, there is a need to build producer capacity of adaptation to climate-smart agriculture, employing sustainable practices for using natural resources and reducing climate risk; greater energy efficiency; and lower GHG emissions from agriculture, including agro-sylvo-pastoral systems and integrated food and energy systems.

Challenge 2: Achieving more with less in food production and consumption

16. Changing production and consumption patterns is fundamental for the transition of agricultural and food systems towards sustainability. LAC's agriculture and livestock sector makes a significant contribution to GDP, exports, employment and rural welfare. It operates in bimodal form: large-scale producers concentrating on exports; small-scale producers directed towards local markets whose output is crucial for food security (FAO 2014).

17. Sustainable intensification: at global level in the last 50 years there has been an increase in agricultural productivity relative to cropped area (reduction from 0.45 ha *per capita* to 0.25 ha *per capita*) thanks to the application of new technologies (improved varieties, inorganic fertilizers and pesticides). This strategy reduces the returns of production systems because of the high cost of inputs and produces environmental externalities, such as soil degradation and water pollution, which are not absorbed by producers (FAO 2012). Intensification does not necessarily imply less pressure on natural resources (FAO 2013a).

18. In the last two decades, LAC's increased productivity has come from improved production efficiency, with a market-driven higher use of inputs (agrochemicals). The same pattern applies to the fisheries sector, which is highly concentrated, and to livestock although there is still considerable potential for reducing the livestock environmental footprint without affecting production (FAO 2013b).

19. Reducing food waste: Food waste in the region amounts to 220 kg *per capita*/year, occurring mainly in the production and retail phase. Food waste is an important restriction on food access and availability, besides signifying higher inputs and, indirectly, more GHG emissions (FAO 2012a).

Achieving more with less: Facing the challenge

20. Public policy efforts need to be redoubled *to encourage a rational use of resources* both in agro-industry and among farmers. It is important to ensure that good practices function in the conditions of instability that result from climate change or market activity (FAO 2013). There is a need *to increase investment in innovation and research* on techniques and incentives based on sustainable practices tailored to the reality and context of each country.

21. To reduce the significant food losses that occur in the production phase, efforts should focus on the first links of the chain, particularly among small producers (FAO 2012a). Measures should be accompanied by awareness-raising campaigns aimed at consumers, stressing the importance of reducing the environmental footprint by avoiding food loss.

Challenge 3: Conserving, protecting and enhancing the state of natural resources

22. Latin America and the Caribbean is the ecologically most diverse region of the planet, harbouring between 30% and 50 % of the world's animal species and a quarter of its forests. This rich

biodiversity could function as a major source of income and employment in many countries (ECLAC 2012).

23. Farmers and livestock producers are the primary managers of natural resources because of their land occupancy and because they account for 72% of water withdrawals. They are therefore important actors for conserving the natural heritage and can provide many environmental services to society.

24. Current production systems generate multiple pressures on ecosystems, especially forests. Between 2005 and 2010 forest conversion due to the region's expanding agricultural frontier reached 3.95 million hectares a year, for the most part in South America. The annual rate of change was three times the global rate. The change in land use is responsible for a higher emission of GHGs in LAC. The large expanses of market-driven monocropping and extensive cattle ranching pose the highest risks for biodiversity and soil degradation.

Conserving natural resources: Facing the challenge

25. The transition towards a more sustainable future requires public policies that incorporate and accentuate an ecosystem vision of agricultural production and greater emphasis on good practices that draw upon the synergies of different production systems, to achieve positive impacts on three fronts: consolidating production; safeguarding biodiversity; and sustaining the livelihoods of local populations. In order to achieve such a transition, it is important to exploit the potential that lies in biodiversity for the generation of income. Such a vision needs to be bolstered by enhanced intersectoral coordination at its different levels.

26. In Latin America and the Caribbean there are many experiences of integrated production and conservation of biodiversity, notably indigenous and traditional agricultural and food systems, family farmers, conservation of agro-biodiversity, management of shared resources and protection of natural resources. Deforestation has thus fallen 20% in the last five years, among other factors because of more forests used for non-wood forest products, agroforestry systems and forests used as carbon sinks (ECLAC-FAO-IICA 2013).

27. To achieve a better integration of production, conservation and social policies, systems of land use planning and management on different scales need to be promoted, from national to local, with the inclusion of a wide range of actors. At present, there are two types of strategy for the implementation of agro-environmental policies: (i) "land sparing" policies that prioritize more productive areas for crop and livestock production and leave areas with little potential for the protection of biodiversity; and (ii) "land sharing" policies that seek the protection of biodiversity and agricultural production in the same territorial area (FAO-Brazil 2014).

28. With regard to "land sparing" in LAC, intensive production systems have been implemented and protected areas created. The latter doubled between 1990 and 2000 (ECLAC 2012). However, the resources allocated have not always been sufficient for effective protection, leaving such areas vulnerable to encroachment by agricultural systems. As for "land sharing", the benefits of the integration of agro-sylvo-pastoral systems have been widely demonstrated in the region (FAO-Brazil 2014), raising producer income (ECLAC 2012) while helping generate more biodiverse and resilient agro-ecosystems.

29. The central challenge is to balance the two strategies under a territorial vision, according to biome conditions and context. There are inherent conflicts and compensations in the objectives of increasing productivity, safeguarding natural resources and sustaining rural livelihoods.

30. Financial instruments need to be strengthened to induce family farmers to cover the costs of adapting their production systems to the conservation and sustainable use of resources. These could be

in the form of technical assistance; purchase of native seeds; vouchers for healthy food; and systems of payment for environmental services (PES). It is important to raise awareness of the ecosystem services that sustainable production systems provide and to orient consumers towards food commodities that have been produced responsibly, for example through certification or fair trade schemes.

Challenge 4: Improving and safeguarding rural livelihoods and social welfare

31. In LAC the livelihoods of the rural population – and access to food – depend largely on agriculture. This is an important source of employment, although this is often informal which excludes many workers from social security systems. Pay is often below the minimum wage, with serious consequences on poverty and indigence. Women's participation in the labour market is low (30-40 %) (FAO 2013).

32. In many countries, family farming underpins rural livelihoods. An important factor restricting the development of family farmers is their limited access to production resources, notably land and water. There is growing land concentration and foreign ownership in the region (ECLAC-FAO-IICA 2013). Women and indigenous peoples in particular lack access to production resources and land ownership (ECLAC 2012). The insecure land tenure of small producers is a key restraint on investment in more sustainable practices.

Improving rural livelihoods: Facing the challenge

33. The principal aspects to be considered are:

- Stimulating formal wage labour.
- Enhancing the access of family farmers, especially women and indigenous peoples, to production resources (land and water), ensuring land tenure in accordance with the socio-economic context and recognition of community-based tenure.
- Integrating family farmers in local and regional markets through infrastructure, improved production processes and synergies among social development programmes.
- Diversifying local economies (e.g. added value of agricultural commodities, socio-biodiversity products, agro-sylvo-pastoral systems, tourism…).
- ECLAC - IICA - FAO 2013.

Looking ahead: Vision and governance for transition towards sustainable food and agriculture

34. A transition towards sustainable agricultural and food production requires decisions by millions of men and women producers and consumers. Incentives and conditions are therefore needed that will foster coherent decision-making and mechanisms that will identify and resolve any discrepancies that may arise in the performance of initiatives. This in turn requires systems of governance that are fair, effective, participatory and results-oriented, together with accountability (FAO 2012). The path towards building such systems crosses different areas of public policy at regional, national and local level. It is therefore essential to develop an understanding of the state of policy viewed from its present and potential intersectoral linkages, so that these may be incorporated into the enhanced institutional structure.

35. The international community is defining Sustainable Development Goals in the framework of the Post-2015 agenda and Rio+20. It is thus important to forge and apply a common vision in the region – respecting its diversity – to achieve food and nutritional security while conserving the environment and the natural resources that underpin food production. Similarly, progress is needed in formulating policy frameworks, incentives and strategies that will facilitate the transition and transformation of food production and consumption systems towards sustainability.

36. Regional integration bodies such as ECLAC, PETROCARIBE, MERCOSUR, CAN, CARICOM and SICA can serve as platforms for dialogue on sustainable development policies and for promoting public and private investment, South-South Cooperation for the protection of natural resources, the sustainable intensification of production and adaptation to climate change in the agriculture, livestock, forest, fisheries and aquaculture sectors.

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