E/C.19/2008/CRP. 2
7 February 2008
English

Permanent Forum on Indigenous Issues
Seventh session
New York, 21 April - 2 May 2008

INTER-AGENCY SUPPORT GROUP ON INDIGENOUS PEOPLES' ISSUES
COLLATED PAPER ON INDIGENOUS PEOPLES AND CLIMATE CHANGE

Summary

The 2007 meeting of the Inter-Agency Support Group on Indigenous Issues, held in Montreal, 17-19 September, was convened and hosted by the Secretariat of the Convention on Biological Diversity. The theme of the meeting was "Climate Change and Indigenous Peoples". The impact of climate change on indigenous communities, their traditional knowledge and related biological diversity is of great concern to members of the IASG. Indigenous peoples, often among the world's most marginalized and impoverished peoples will bear the brunt of the catastrophe of climate change and as such provide a human face to the climate change crises. The most advanced scientific research has concluded that changes in climate will gravely harm the health of their traditional lands and waters and that many of the plants and animals upon which they depend for survival will be threatened by the immediate impacts of climate change. It was felt that such conclusions require urgent and unprecedented efforts and interventions from the global community. Recognizing that the theme of the seventh session of the UNPFII will be climate change, members of the IASG agreed to prepare a common paper on climate change which will be presented to the seventh session of the UNPFII. Mr. John Scott, CBD, was appointed as the coordinator of the paper. It was recommended to agencies that the paper include an overview of the impact of climate change on indigenous peoples, especially the social, cultural, human rights and development impacts.

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THE SECRETARIAT OF THE CONVENTION ON BIOLOGICAL DIVERSITY

Introduction

1. In decision VIII/5 B, paragraph 6, the Conference of the Parties noted the specific vulnerabilities of indigenous and local communities [1] to the impacts of climate change and the accelerated threats to traditional knowledge, innovations and practices. The Conference of the Parties requested that further research be conducted regarding indigenous and local communities highly vulnerable to climate change, with focus on causes and solutions. In response, the Executive Secretary commissioned a consultant report[2], which focuses on the specific vulnerabilities of indigenous and local communities (highly vulnerable indigenous and local communities), *inter alia*, of the Arctic, small island States and high altitudes, concerning the impacts of climate change and accelerated threats, such as pollution, drought and desertification, to traditional knowledge, innovations and practices.

2. Furthermore, In COP 8 Decision VIII/30, Biodiversity and climate change: guidance to promote synergy among activities for biodiversity conservation, mitigating or adapting to climate change and combating land degradation, *The Conference of the Parties to the Convention on Biological Diversity*, […] *Recalling* decision VII/15, paragraph 15,

> 3. *Encourages* Parties and other Governments, when addressing research needs and activities on the impacts of climate change on biodiversity, to involve indigenous and local communities and other relevant stakeholders, particularly on issues related to ecosystem health, human health, traditional knowledge, and livelihoods;
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> 5. *Invites* Parties, other Governments, relevant organizations and research institutions, to address, as appropriate, the research gaps outlined in the report of the Ad Hoc

[1] *Inter alia*, of the Arctic, small island States and high altitudes

[2] UNEP/CBD/WG8J/5/INF/19

Technical Expert Group on Biodiversity and Adaptation to Climate Change and summarized in paragraph 3 of recommendation XI/14 of the Subsidiary Body on Scientific, Technical and Technological Advice and to promote research on climate change response activities related to biodiversity, in the context of the ecosystem approach and sustainable use, and in order to further facilitate the incorporation of biodiversity considerations into the design, implementation and monitoring of activities aimed at the mitigation and adaptation of the impacts of climate change, including on indigenous peoples and local communities;

7. *Invites* Parties to consider the needs of the most vulnerable regions and ecosystems, and their indigenous and local communities, including the need to provide additional support to developing countries, particularly the least developed and small-island developing States among them, and countries with economies in transition, in order to enhance understanding, design and communication of synergies in the national implementation of the three Rio conventions, the Ramsar Convention on Wetlands, the World Heritage Convention, the Convention on Migratory Species, and other multilateral environmental agreements, and to support the preparation of adaptation activities and plans, including assistance in the areas of financial resources, technology transfer, education and outreach, capacity-building, research and systemic observation, and harmonized reporting.

Climate change and the Convention on Biological Diversity

3. In the context of the Convention, the consultant's report recommends that Parties to the Convention and Governments may wish to consider, as far as possible and as appropriate, introducing necessary measures, administrative as well as legislative measures, to mitigate and adapt to the impacts of climate change on vulnerable indigenous and local communities, and especially the harmful impact climate change posses to indigenous and local communities' traditional knowledge, innovations and practices relevant to conservation and sustainable use of biological diversity.

Physical basis of climate change

4. The emerging scientific consensus that climate change is occurring is evident in the unanimous conclusion contained in the report of Working Group I of the International

Panel on Climate Change (IPCC),[3] which predicts that the future direction of the climate change trend will involve continuing physical changes, including warmer and more frequent hot days and nights over most land areas, and increase in the area affected by drought and a rise in sea levels. The Arctic, Small Island States and high altitude areas are considered to be areas especially vulnerable to climate-change effects such as rising ocean levels and extremes in temperature and precipitation and may in fact be experiencing accelerated changes. The impact of climate change is already visible in many of these sensitive areas of the world.

Indigenous and local communities vulnerable to climate change

5. The IPCC predicts that climate change will likely have a profound effect on humanity. Indigenous and local communities are among the first to face the direct adverse consequences of climate change, due to their dependence upon and close relationship with the environment and its resources. While climate change may still be a distant threat for some people it is already a grim reality for many indigenous and local communities, especially those on the three regions mentioned. Climate change brings additional vulnerabilities to indigenous and local communities, which add to existing challenges, including political and economic marginalization, land and resource encroachments, human rights violations, discrimination, unemployment and substance abuse.

Traditional knowledge, innovations and practices

6. Climate change has a harmful affect on biological diversity and the related knowledge, innovations and practices of indigenous and local communities. Traditional knowledge is

[3] http://www.ipcc.ch/

an inseparable part of indigenous and local communities' culture, social structures, economy, livelihoods, beliefs, traditions, customs, customary law, health and their relationship to the local environment. It is the totality of all such elements that makes their knowledge, innovations and practices vital in relation to biological diversity and sustainable development.

Adaptation and mitigation

7. Dramatic changes in climate are already taking place, with consequent severe ecological, social, economic and cultural impacts for vulnerable indigenous and local communities. It is therefore necessary to implement mitigation measures designed to halt further changes and adaptation strategies and programmes developed to adjust to the impacts of climate change. Indigenous and local communities in areas highly vulnerable to climate change are already witnessing the impacts of climate change, and are developing their own adaptation strategies, based on scientific research, local observational data, and/or traditional knowledge. It is important that community-based adaptation strategies inform Parties' regional and national adaptation strategies, policies and programmes, through processes, which ensure the full and effective participation of indigenous and local communities.

8. In many instances, adaptation to new conditions requires additional financial resources and the transfer of technological capacity that most indigenous and local communities do not possess. Indigenous and local communities are engaging in strategies for immediate short-term adaptation. However, resource and capacity constraints limit the communities' ability to implement many needed adaptations. Further, indigenous and local

communities will require financial and technical resources to develop and implement effective long-term adaptation strategies. Communities may need to be provided with additional necessary resources and assistance in order to enhance their capacity to undertake necessary adaptations. Mechanisms for funding indigenous and local community research and adaptation capacity may also be desirable.

9. Mitigation measures are essential to prevent further impacts which threaten indigenous and local communities vulnerable to climate change[4]. Thus far, indigenous and local communities have been largely been left out of the development of mitigation measures at the national and international level. However, in their role as stewards of biodiversity and as holders of traditional knowledge relevant for conservation and sustainable use, indigenous and local communities have a unique contribution to make in mitigation initiatives. Further, some mitigation measures may have undesirable direct and indirect consequences for indigenous and local communities. For instance, biofuel initiatives are a means of reducing greenhouse gas emissions but may lead to an increase in monoculture and an associated decline in biodiversity and food security of indigenous and local communities. The full and effective participation of indigenous and local communities is crucial in the elaboration of State-developed mitigation measures to ensure that such schemes do not negatively affect vulnerable communities.

10. The specific vulnerabilities of indigenous and local communities of the Arctic, small island States and high altitudes, concerning the impacts of climate change are discussed

[4] Mitigation options currently focus on reducing greenhouse gas emissions (such as initiatives to decrease fossil-fuel use), and increasing the capacity of natural systems to absorb carbon dioxide (IPCC).

at length in the full report (UNEP/CBD/WG8J/5/INF/18). The report also notes that dry and sub-humid lands may be a fourth region experiencing accelerated climate change, making indigenous and local communities in this fourth region also highly vulnerable.

Further research

11 Further research is undoubtedly needed, in particular research that involves indigenous and local communities through the incorporation of their observations and application of their traditional knowledge. This will substantially enhance the understanding of local and regional impacts of climate change. Additionally, research directed at how indigenous and local communities can adapt to changing conditions and on mitigation possibilities is needed. Specific research on the impact of climate change on indigenous and local communities, especially research driven by the communities themselves, is generally lacking.

12. Research that addresses the needs of indigenous and local communities and assists them in planning their adaptation strategies is required. It would be advantageous to identify and fill gaps in the research, as perceived by indigenous and local communities. Research results need to be communicated back to the indigenous and local communities through culturally and linguistically appropriate means. Indigenous and local communities need to be supported in initiating research, including through the development of networks between indigenous and local communities across vulnerable regions.

13. Research which engages indigenous and local communities, their organizations and institutions and which is aimed at studying and analyzing possible adaptation is encouraged. **Indigenous and local communities' traditional knowledge should be an integral part of any process, study and analysis aimed at elaborating on such communities' ability to adapt to changing environmental conditions. In addition, it is desirable the research be conducted in a way that recognizes and continues to support and develop the capacities of indigenous and local communities. Parties are urged to ensure full and effective participation of indigenous and local communities in the entire research process and in the development of adaptation strategies which affect them.**

14. The climate change research programmes which emphasize the perspective and research needs of indigenous and local communities may serve as a model for further research initiatives. This research acknowledges that indigenous observations and documentation of existing knowledge of changes that have occurred and monitoring of future changes are important considerations in the context of climate change research. Programs such as the Arctic Climate Impact Assessment (ACIA) and the EALÁT-Network study (a component of the International Polar Year) employ a collaborative approach to research. The United Nations University is in the process of establishing a Research and Training Centre on Traditional Knowledge, which will focus on many aspects of traditional knowledge, including the impact of climate change on indigenous and local communities.

15. This report is recognized as a starting point for understanding the impact of climate change on indigenous and local communities. To develop a greater understanding of the impacts of climate change on indigenous and local communities and their traditional knowledge, **it is recommended that there be further research into the impacts of climate change and accelerated threats on traditional knowledge, innovations and practices, focusing on the specific vulnerabilities of indigenous and local communities in other highly vulnerable areas, including low-lying river deltas, semi-arid and arid lands/dry and sub-humid lands (i.e. grasslands). Other highly vulnerable indigenous and local communities which could be the focus of study include nomadic and semi-nomadic indigenous communities and fishing communities.**

16. Recognizing that the issue of indigenous and local communities' vulnerability to climate change involves many aspects, the Secretariat is planning to work in partnership with other United Nations bodies that are addressing related issues, including the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Permanent Forum on Indigenous Issues (UNPFII), United Nations University – Institute for Advances Studies (UNU-IAS) Traditional Knowledge Training Centre, and the Inter-Agency Support Group (IASG) on Indigenous Peoples Issues. Indigenous and local communities should continue to be key partners in this research. Cooperation with funding agencies, including the Global Environmental Facility (GEF) and the UNDP, may also be beneficial.

17. Further to this the Secretariat is working in partnership with the Government of Finland to facilitate an International Expert Meeting for the Arctic Region on Responses to Climate Change for Indigenous and Local Communities and the impact on their Traditional Knowledge related to Biological Diversity, to be held in Helsinki, Finland, 25-28 March 2008. The Secretariat will then present the findings of this regional expert meeting to the joint UNU-IAS, Secretariat of the Permanent Forum on Indigenous Issues (SPFII) and the North Australian Indigenous Land and Sea Management Alliance (NAILSMA), International Expert Meeting on Indigenous Peoples and Climate Change to be held in Darwin, Australia from 2-4 April 2008.

THE SECRETARIAT OF THE UNITED NATIONS PERMANENT FORUM ON INDIGENOUS ISSUES

18. The UN Permanent Forum is an advisory body to the Economic and Social Council and part of its responsibility is to raise awareness and promote the integration and coordination of activities related to indigenous issues within the UN system. Hence, the UN Permanent Forum is well placed to support indigenous peoples in providing a 'human face' to the issues regarding climate change and its environmental threats and challenges.

19. Climate change is a major issue for indigenous peoples around the world so it is no coincidence that the special theme for the seventh session of the UN Permanent Forum on Indigenous Issues is "*Climate change, bio-cultural diversity and livelihoods: the stewardship role of indigenous peoples and new challenges*".

20. Climate change is considered to be a critical global challenge and recent events have demonstrated the world's growing vulnerability to climate change. The impacts of climate change range from affecting agriculture to further endangering food security, to rising sea-levels and the accelerated erosion of coastal zones, increasing intensity of natural disasters, species extinction and the spread of vector-borne diseases.

21. For indigenous peoples, climate change is already a reality and poses threats and dangers to the survival of their communities. Despite the fact that these changes are impacting intensely on indigenous peoples and their communities, they are very rarely considered in public discourses on climate change. Indigenous peoples are vital to, and active in, the many ecosystems that occupy their lands and territories and are therefore, in a position to help enhance the resilience of these ecosystems. In addition, indigenous peoples interpret and react to climate change impacts in creative ways, drawing on traditional knowledge and other technologies to find solutions, which may help society at large to cope with impending changes.[5]

22. In many instances, high level meetings and various reports on climate change make only scarce mention of indigenous peoples, and then only in certain regions and as helpless victims of changes beyond their control. Hence, there is a need to shift the focus so that indigenous peoples are primary actors within global climate change monitoring,

[5] Jan Salick and Anja Byg, *Indigenous Peoples and Climate Change,* A Tyndall Centre Publication, Tyndall Centre for Climate Change Research, Oxford, May 2007, p4

adaptation and innovation. Indigenous peoples must have a voice in policy formation and action in the same way they do in other relevant UN processes such as the UN Permanent Forum on Indigenous Issues, the Convention on Biological Diversity, the World Intellectual Property Organization, the Human Rights Council and, to some extent, the United Nations Framework Convention on Climate Change and others.

23. The inclusion of indigenous peoples' voices in issues affecting them is an important consideration in regards to the ongoing debates around climate change. The right to participate in decision-making is confirmed in the United Nations Declaration on the Rights of Indigenous Peoples and Agenda 21. Article 18 of the Declaration on the Rights of Indigenous Peoples states that "Indigenous peoples have the right to participate in decision-making in matters which would affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions".[6] Chapter 26 in Agenda 21 is devoted solely to *Recognizing And Strengthening The Role Of Indigenous People And Their Communities* and includes a number of references about recognizing indigenous peoples as a major group with a right to participate at all national and international policy and implementation meetings in regards to sustainable development and other program areas of Agenda 21.[7]

24. Adapting to climate change is a necessary strategy to complement climate change mitigation effects. Adaptation often produces benefits as well as forming a basis for

[6] *United Nations Declaration on the Rights of Indigenous Peoples, A/RES/295,* September 2007, p7

[7] (*Agenda 21 The Rio Declaration on Environment and Development* A/CONF.151/26 (Vol. I) 12 August 1992)

coping with future climate change. However, experience demonstrates that there are constraints to achieving the full measure of potential adaptation. There are many instances of maladaptation, such as promoting development in risk-prone locations, which can occur due to decisions based on short-term considerations.

25. Traditional knowledge and practices are important to sustaining and managing the environment. However, indigenous people recognize that enhancing adaptive capacity involves more than local options which will only be successful if it is integrated with other strategies such as disaster preparation, land-use planning, environmental conservation and national plans for sustainable development. Further, long-term adaptation to climate change requires anticipatory actions, which would require considerable investment of capital, labor, and time and in many indigenous regions of the world, there are already constraints on resources and a lack of access to technology.

26. Some indigenous peoples have expressed optimism in adapting to climate change, in particular that it is likely to create some economic opportunities. For example, the increased demand for renewable energy from wind and solar energy could make indigenous lands an important resource for such energy, replacing fossil fuel-derived energy and limiting greenhouse gas emissions.[8]

27. Biofuels, carbon sinks and carbon emissions trading are emerging issues under the Kyoto Protocol which also impact on indigenous peoples. For example, biofuel crops

[8] Maynard, Nancy C (ed) *Final Report Native People-Native Homelands Workshop on Climate Change 28 October-1 November 1998*, Albuquerque, New Mexico p67

such as oil palm plantation and sugar cane are now grown on lands that were once native forests in the tropical areas of Africa, Asia-Pacific, Latin America and the Caribbean. Some of these projects take place on indigenous peoples lands and territories. The destruction of carbon reservoirs like native forests leads to more release of greenhouse gasses. In their 2006 paper *Oil Palm and Other Commercial Tree Plantations, Monocropping: Impacts on Indigenous Peoples' Land Tenure and Resource Management Systems and Livelihoods*, Victoria Tauli-Corpuz and Parshuram Tamang, members of the UNPFII, provide a comprehensive overview of the issues around monocopping and its impact on indigenous peoples who have been evicted from their lands where large scale tree plantations are taking place.

28. Carbon emissions trading is an issue that continues to be debated in the international community. The main concern is that while companies do not have to reduce their emissions, they can pay other companies and groups, mostly from non-industrialized countries, to reduce emissions or to absorb CO2 from the atmosphere, and account that as their own reductions. The big profit for companies is that when paying others, they pay only a fraction of what they would need to invest at home to achieve the same goal.

29. At the same time, indigenous peoples see the potential economic benefits in taking part in carbon trading projects, especially when they have already developed, over thousands of years, sustainable neutral and carbon negative livelihoods. As an example, in June 2007, an oil company, ConocoPhillips agreed to pay a group of indigenous peoples in northern Australia A$1m ($US850,000) a year, for 17 years, to offset 100,000 tons of the refinery's own greenhouse emissions. The group will use traditional fire

management practices which have been scientifically shown to reduce greenhouse emissions as compared to naturally occurring wildfires.[9]

30. The broader question of how the interests of states and the private sector can be aligned with the interests of indigenous peoples is an ongoing issue and was the focus of the UNPFII's international expert workshop held in Salehard, Yamal-Nenets Autonomous Okrug, Russian Federation in July 2007, titled *Perspectives of Relationships between Indigenous Peoples and Industrial Companies*. One of the major concerns raised is the violations of human rights of indigenous peoples, especially as a result of mega projects, including mining, oil, gas and timber extraction and other extractive industries, monoculture plantations and dams. Further, that the impact of these projects often results in environmental damage on indigenous peoples' livelihoods, their traditional lands, territories and resources. Other negative impacts include pollution and toxic dumping and its detrimental health effects, which was the focus of another UNPFII international expert workshop titled *Indigenous Peoples and Protection of the Environment* held in Khabarovsk, Russian Federation, in August 2007[10].

31. Indigenous peoples' experiences and interpretation as well as scientific research indicate that climate change seldom acts in isolation but interacts with other environmental and social factors. Given past experiences, indigenous peoples and their communities have been especially resilient and have adjusted to environmental and socio-economic changes. Further, they continue to fight to protect their rich social and

[9] Mugarura, Victor *Aborigines burn the way to climate control,* BBC, September 18, 2007 http://news.bbc.co.uk/2/hi/asia-pacific/6726059.stm

[10] Both reports mentioned in this paragraph may be accessed at the website of the Secretariat of the UN Permanent Forum on Indigenous Issues, www.un.org/esa/socdev/unpfii.

cultural fabric and enduring community attachment. Assessment of adaptive capacity of indigenous peoples and their communities must take into account not only their inherent resiliencies, but also differential rights, discrimination and other social processes that limit access to resources, power and decision-making. In other words, the socio-cultural context in which community activities and livelihoods are situated is important.

INTERNATIONAL LABOUR ORGANIZATION

32. Climate change has already started affecting some of the poorest and most vulnerable communities across the world, including indigenous peoples' communities. Paradoxically, indigenous peoples, whose livelihood activities are most respectful of nature and the environment, suffer immediately and directly from climate change and its consequences. The negative effects of climate change on indigenous peoples' traditional livelihood strategies, which are closely linked to access to land and natural resources, are becoming evident. Increased pressure on arable land, decrease in and disappearance of certain species, seasonal climate change in the form of extreme weather events such as tropical storms and long periods of drought means that a number of traditional livelihood activities are increasingly coming under pressure and are at the risk of being unable to sustain livelihoods.

33. Climate change thus becomes an additional factor impeding the realization of the rights of indigenous peoples to pursue their traditional livelihood strategies. Traditional livelihoods strategies must therefore be diversified and combined with other strategies in

non-traditional sectors and through e.g. skills improvements and entrepreneurship development. This will allow indigenous peoples' communities to pursue alternative socio-economic strategies and build healthy and enterprising communities. In addition, climate change is likely to accelerate out-migration leading indigenous peoples to enter into new areas of work and employment in the formal and informal economies, often outside their communities, where they are particularly vulnerable to exploitation, discrimination, forced labour and child labour.

34. The ILO's objective to promote decent work opportunities for all is highly relevant for developing new livelihood strategies where traditional ones are no longer sufficient or possible, as a result of climate change. While new livelihood strategies will be necessary, measures should also be taken to ensure that indigenous peoples can continue to engage in their traditional occupations. It is increasingly recognized that traditional livelihood strategies, are making a positive contribution the protection of the environment, which is of an ever increasing importance in the context of climate change. The full and effective application of ILO standards, particularly Conventions Nos. 169 and 111 is key in this regard.

35. Where natural resources are threatened, the right of indigenous peoples to participate in the use, management and conservation of these resources is crucial. Another fundamental right is to ensure their consultation and participation, in line with international standards, in processes that design and implement overall coping and mitigation strategies at the different levels. The trend towards carbon-free energy, which

leads to increased pressures on indigenous peoples' lands and livelihoods, is a case in point.

36. The participation of indigenous peoples in the development and implementation of strategies to address climate change is also crucial because indigenous peoples have an important contribution to make through their traditional knowledge, innovations and practices.

INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

IFAD's advantages in supporting Indigenous Peoples' adaptation and their potential role for mitigation

37. The core of IFAD activities is the development of agriculture, one of the sectors most vulnerable to climate change. In addressing the impacts of climate change on agriculture in remote rural areas, IFAD is called to play a crucial role.

38. Climate change will have enormous impact on the livelihoods of indigenous peoples. Already, many rural communities are being forced to adapt their way of life due to the changing environment. Some indigenous communities are being displaced from their traditional lands and territories due to coastal and land erosion caused by large storm-driven waves and the thawing of the permafrost. Dislocation is also a reality in small island states such as Samoa and Vanuatu, where flooding from extreme weather and rising sea levels have become the norm. High altitude areas are not only experiencing

melting glaciers and ice peaks, but some are also witnessing negative impacts on their agriculture as a result of climate change and drought. Crop failures and livestock deaths are causing higher economic losses and undermining food security. Food prices are rising, partly as a result of falling yields. Crop yields could drop by 50 per cent by 2020 in some countries. Agriculture and forestry can play a key role in tackling climate change. Afforestation and reforestation, better land management practices such as conservation tillage and agroforestry, rehabilitation of degraded crop and pasture land and better livestock management practices can all contribute significantly to reducing carbon emissions.

39. Apart from being highly affected by climate change, indigenous peoples also risk being heavily affected by the policies and programmes put in place to mitigate its effects. The global carbon market in avoided deforestation seems to be emerging in the future years as one mitigation strategy to climate changes. This could represent a huge financial opportunity for indigenous peoples to be paid for preserving their forest lands. However, it could also represent a threat if the issue of their land rights is not properly addressed to recognize their collective and individual rights and their customary laws. Another threat comes from the large-scale monoculture plantations for bio-fuel, which is becoming an integral part of the economic growth strategy of many countries, and which has already produced further aggressive expropriation of indigenous peoples' land and territories. Conversion of forests into industrial plantation and monocropping is a major concern and threat to indigenous peoples' livelihoods. Monocropping is threatening biodiversity which indigenous peoples use as a common strategy to minimize the risk due to harvest

failure. They grow many different crops and varieties and supplement these by hunting, fishing and gathering wild food plants.

40. Their livelihood systems are often vulnerable to environmental degradation and climate change, especially as many inhabit economically and politically marginal areas in fragile ecosystems in the countries likely to be worst affected by climate change. While indigenous peoples are among the least responsible for the problem, they are among those most vulnerable to it.

41. However, indigenous peoples can also be part of the solution, due to their knowledge of managing their environment in a sustainable manner. This requires finding ways to assist them to continue to manage their lands and where possible, to store carbon.

The value of IFAD's past experiences in dealing with CC effects

42. As part of its mission of enabling the poor to overcome their poverty, IFAD's activities in many ways have been directly supporting the rural poor and particularly indigenous peoples to deal with the adverse consequences of climate change through meetings, conferences and in-house reflections and projects.

43. The international community has agreed on four building blocks to respond to climate change: adaptation, mitigation, technology and finance:

Adaptation includes adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial

opportunities (UNFCCC). In response to the mentioned climatic stimuli, IFAD has been mainly concentrating on reversing ecosystem losses (water availability, land fertility, etc.), and on building the beneficiaries' capacities to deal with increased droughts and floods. Those kind of activities are comparable to reactive adaptation and will be mainstreamed in IFAD's future approach. The most effective IFAD actions in this field are concentrated in some broad intervention areas:

a. Improvement of agricultural techniques

b. Promotion of sustainable natural resources management

c. Coping with disaster impacts and risk-preparedness

d. Promotion of income diversification

Promotion of income diversification

44. In this regard, IFAD has learned that indigenous peoples can increase their incomes by diversifying their sources of food and income. This can involve crop diversification, agricultural productivity enhancement, microfinance, supporting micro-enterprises, and alternative income generation opportunities like ecotourism and processing of medicinal products. For instance, crop diversification into tea, coffee, cash-crop trees, organic farming, and horticultural production has served to increase household incomes by up to 43% among minorities in mountain areas of China. Research and development for the production and marketing of high-value non-timber forest products has led to similar results in Laos. Support for indigenous women micro-entrepreneurs has proved a very effective way not only to support women's economic empowerment but also to increase household incomes in many countries in Latin America and Asia.

45. With its focus on marginalized groups, particularly indigenous peoples, the promotion of nature-based tourism in Mexico (Sustainable Development Project for Rural and Indigenous Communities of the Semi-Arid North-West) reduces the dependence on agricultural-based products, promoting a shift to off-farm activities and improving the natural resource base and environmental services.

Risk preparedness

46. Among IFAD's other activities, a small grant to the Secretariat of the Pacific Community will promote the development and dissemination of appropriate crops and technologies. The results will be achieved through the valorization of indigenous and atoll technologies through action research and documentation, in order to support agriculture and fisheries. A similar activity will be managed by the Solomon Island Development Trust, which is the recipient of a small grant through IFAD's Indigenous Peoples' Assistance Facility (IPAF). The Babanakira and Kolina indigenous populations will be assisted in improving post crisis resilience by merging valorized traditional with scientific knowledge.

47. The Pastoral Community Development Project in Ethiopia will promote and facilitate participatory programming, implementation and monitoring, by strengthening the institutional capacity of indigenous social organizations. The establishment of early warning systems and disaster preparedness plans will also improve the resilience and ability of beneficiaries to cope with external shocks and reduce the impact of drought and famine which will indirectly contribute to increasing adaptation to climate change.

48. The role of IFAD as the Global Environment Facility (GEF) executing agency must be mentioned among the background activities that will feed the mainstreaming exercise. The GEF works with countries to identify areas vulnerable to climate change and rising sea levels by developing cost-effective response programs, as well as enhance regional and national capabilities for dealing with climate change. As executing agency, IFAD will co-finance GEF projects from core resources and some of the adaptation projects will be implemented within IFAD development interventions.

49. **Mitigation** has been defined as "technological change and substitution that reduce resource inputs and emissions per unit of output. (…) Mitigation means implementing policies to reduce Green House Gas emissions and enhance sinks" (UNFCCC). As executing agency of GEF, IFAD is already assisting developing countries to expand their use of clean energy and reduce their consumption of fossil fuel. The GEF is the largest funder of renewable energy in the developing world, supporting solar, wind, geothermal, biomass, and small hydropower energy.

50. Indigenous peoples use a large proportion of the land surface per head of population. Hence, there is a strong correlation between the location of indigenous territories and the areas with the highest biodiversity and natural resource conservation. As a result, they have the potential to be key players in designing and implementing mitigation measures. These include carbon sequestration, forest protection, renewable energy production, conservation tillage, agroforestry and rehabilitation of degraded crop and pasture land.

51. IFAD is supporting reforestation in the Livelihoods Improvement Project in the Himalayas with a focus on gender inequalities and indigenous households. An IFAD-supported programme in China is involved in setting up solar power systems to help poor households get energy from the abundant sunlight in the area. A biogas project in China is turning human and animal waste into a mixture of methane and carbon dioxide gases that can be used for lighting and cooking.

52. IFAD is also in discussion with the International Food Policy Research Institute (IFPRI), in regards to its strategic partnership, on providing assistance to poor rural people in order to benefit economically from storing carbon on their lands in the interest of all humanity.

53. Assess to **technology** has a significant role to play in tackling the causes of climate change and helping people adapt to its impact. A major push on research and development is needed for cleaner and more efficient technologies. Through ad hoc partnerships, IFAD can develop new and cleaner technologies. This includes carbon capture and storage technologies as well as technologies for adaptation, such as plants that are more resilient to climate variability.

54. IFAD supports research institutes and other bodies to test, adapt and disseminate technology to help climate-proof agriculture. For example, an IFAD grant to CGIAR-IITA is funding research into improved soil fertility for yam production in Nigeria, Benin, Togo, Ghana, Cameroon and Côte d'Ivoire. IFAD and the International Centre for Maize and Wheat Improvement have established a partnership to create and deliver

stress-tolerant maize variety to poor farmers in sub-Saharan Africa. IFAD recognizes the importance of blending traditional knowledge with scientific research, and the need to develop stronger alliances for sharing knowledge about responses to climate variability. Indigenous peoples are not to be seen as passive and helpless victims of climate change, instead they are active in maintaining the many ecosystems and can play an important role in enhancing the resilience of the ecosystems in which they live. Indigenous peoples observe, interpret and react to climate change impacts in creative ways, drawing on traditional knowledge which, when combined with new technologies, can find solutions that would be useful to society at large. The challenge for development actors lies in finding innovative and affordable approaches to enhance and strengthen traditional practices through blending with appropriate and culturally sensitive modern technologies.

55. **Financing** the response to climate change will cost billions of dollars and involve massive shifts in investment patterns across a huge range of sectors, from power generation to agriculture and forestry. The carbon market, which is already playing an important role in shifting private investment flows, will have to be significantly expanded to address the needs for additional investment and financial flows. National policies can help by encouraging private and public investors to invest in more climate-friendly alternative technologies and by spreading information about possible risks to the private and public sectors.

56. Multilateral financial institutions, regional development banks, bilateral and multilateral aid agencies and, of course, the United Nations, all have important roles to play. **The Clean Development Mechanism, the Clean Energy Investment**

Framework, the Nairobi Framework, the Nairobi Work Programme and the GEF adaptation funds are good examples of the kind of partnership that will become increasingly important. These mechanisms must better respond to the needs of indigenous peoples and include them as partners in designing and implementing programs that are responsive to local problems and to the goals and visions of indigenous women and men.

58. The **Index-based Weather Insurance** in **China**, funded through the IFAD's innovation mainstreaming programme (IMI) intervenes in arid and semi-arid contexts in China. As in many other contexts, there are farmers exposed to cyclical poverty due to regular crop failures, induced by erratic weather patterns. IFAD's initiative is expected to develop and implement an index based weather insurance system through its innovation mainstreaming programme. This private-public funded activity will insure the rural poor's incomes against weather hazards, breaking the frequent risk of "short term shock – long term impact".

58. Often, policies and programs that are being put in place to adapt and mitigate climate changes, tend to ignore the fact that indigenous peoples have livelihood systems that are historically adapted to their environmental circumstances and are often well suited to the tasks of climate change mitigation and adaptation. There is a need for simultaneous action on: a) ***engaging*** indigenous peoples as full partners in policies and programmes; ensuring flexibility and sensitivity to local contexts and long-term commitment and perspective of intervention; ensuring that the principle of free, prior and informed consent is respected in the design and implementation of programmes on climate change affecting

indigenous peoples' lands, territories and resources; b) ***policy interventions*** that address the legal definition and protection of the natural resource rights of indigenous peoples and factors and circumstances that hinder their participation in national, regional and local strategies; c) ***program interventions*** that address income improvement through sustainable livelihood diversification; research and development, and adaptation of technological solutions to local knowledge and livelihood systems; and technological and institutional innovation to address new challenges linked to ecosystemic fragility and climate change.

59. IFAD values the enormous unrealized potential of indigenous peoples. With their vast wealth of knowledge about their environment, indigenous peoples can and should play a leading role in the global response to climate change. This is particularly true of indigenous women who play a vital role as stewards of natural resources. For this reason, IFAD is pleased that the UN Permanent Forum on Indigenous Issues, in its 2008 session, has decided its theme to be "Climate change, bio-cultural diversity and livelihoods: the stewardship role of indigenous peoples and new challenges."

60. The upcoming Permanent Forum session should mobilize the international development community to focus its attention on indigenous peoples' urgent vulnerability to climate change and their important role in responding to it. More importantly, IFAD very much hopes this increased attention will translate into an international commitment to work with indigenous peoples worldwide in confronting this unprecedented challenge.

61. IFAD will work to ensure that the rural poor, and specifically indigenous peoples, take advantage of the financial mechanisms dedicated to climate change. For the time being, various examples show, for instance, that the mitigation projects are, to some extent, designed for poor people. Further more, in some cases, mitigation projects can jeopardize indigenous peoples' access to various assets, particularly to land. There is a need for mechanisms to be adapted and dedicated to indigenous peoples.

62. IFAD looks forward to working with all its partners to empower the more than 370 million indigenous peoples worldwide to realize their hopes and aspirations. Indigenous peoples have been marginalized, isolated and excluded from key international decisions and processes for far too long. It is time to place indigenous peoples and their needs at the centre of the international development agenda, particularly in our collective response to climate change.

UNITED NATIONS DEVELOPMENT PROGRAMME

63. Local communities, including many indigenous peoples, are often the most directly affected with the impacts of climate change. In some instances these groups may also be the least equipped to cope with the effects of climate change and as a consequence will require external support to adapt their livelihoods to changing patterns of rainfall, drought, flooding and other climate-related risks. In this regard, a UNDP-GEF Community-Based Adaptation (CBA) project, recently launched in November 2007, will be piloting the community component of the GEF Strategic Priority on Adaptation in

order to build the resilience of communities and the ecosystems upon which they rely in the face of climate change impacts. The 10 selected countries have been identified to address a range of environmental situations including mountains, small island developing states, and low-lying delta countries. A number of the countries with high concentrations of indigenous peoples will also be piloting field-based CBA projects which target indigenous populations.

64. In addition to addressing the vulnerability of indigenous peoples to climate change, the Traditional Ecological Knowledge (TEK) of many indigenous peoples also contains an intimate and long-term understanding of climatic trends and variability. The GEF Small Grants Programme has been collaborating with various partners such as The Mountain Institute, The Christensen Fund, Insight, and the Indigenous Peoples' Restoration Network website[11] in order to develop new field-based tools, such as Participatory Video and community-based repeat photography in a number of SGP countries, in order to document and facilitate the TEK of indigenous peoples related to climate change. Given that "adaptive capacity" to address climate change is central to the recent agreement of the UNFCCC in Bali in December 2007 to create a mechanism to fund field-based adaptation projects, it is expected that these tools will play an important role in demonstrating the resilience and adaptive responses by indigenous peoples in the face of climate change.

[11] www.ser.org/iprn

THE UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION

Introduction

65. The United Nations Educational, Scientific and Cultural Organization (UNESCO) recently enumerated some 40 climate change related activities in its five programme sectors of Education, Natural Sciences, Social & Human Sciences, Culture and Communication & Information. Given the wide ranging effects of climate change, the Organization provides an appropriate forum for addressing climate change and its impacts on the environment and human society, as well as opportunities for mitigation and adaptation. Global climate change, and its current and anticipated effects, calls for actions in virtually all of the Organization's fields of competence. These will be implemented through an intersectoral platform for action on climate change, under the direct guidance and review of a UNESCO Task Force on Climate Change.

66. UNESCO's Strategy for Action on Climate Change consists of an integrated multidisciplinary programme capable of offering Member States capacity-building and technical advice – especially during the International Year of Planet Earth (IYPE), 2008 - to design and implement evidence-based policies and projects at the local, national, regional and global levels, drawing on two principal pillars:

a) the sound and unbiased generation and use of data, information and research concerning climate change (the knowledge base) ; and

b) the application of educational tools, specific sectoral measures and public awareness activities.

67. This strategy aims at assisting Member States to:

- build and maintain a requisite knowledge base
- help adaptation to the impacts of climate change
- contribute to a mitigation of its causes, and
- strengthen sustainable development.

Activities specifically relating to Indigenous Peoples and Climate Change

68. In its efforts to create and maintain a knowledge base on climate change, UNESCO's Climate Change Strategy specifically mentions work with indigenous people and their knowledge. This will largely be carried out through the Local and Indigenous Knowledge Systems (LINKS) Programme, as well as through activities of the World Heritage Centre that specifically focus on circumpolar indigenous peoples.

69. The LINKS programme carries out research and assessments based on local and indigenous knowledge systems. This includes recording local-level climate observations, understanding strategies devised by local communities to cope with changing environments, and identifying relevant adaptation measures for indigenous populations in particularly vulnerable environments such as small islands, high altitudes, wet tropics and the circumpolar North. UNESCO's work with indigenous peoples and climate change seeks to better understand the specific vulnerabilities of these communities to climate

change, while also drawing attention to the particular role that indigenous peoples may play as local observers of these processes.

70. Indeed, indigenous peoples are particularly well positioned to observe and record environmental changes as close attention to their natural milieu is often essential for their ways of life and remains of crucial cultural importance, even in areas where lifestyles have been modified by colonialism and globalization. Furthermore, knowledge of a specific locality may stretch back over many generations, and observations shared among generations allow useful comparisons between what is seen today, and what occurred in the past. For these reasons, indigenous knowledge can offer nuanced insights into changes occurring at the local level. This knowledge can consequently supplement and add much needed detail and subtlety to the broader view offered by scientific research.

71. Finally, while current warming trends are unprecedented, many indigenous groups recognize that environmental and climatic change are not in themselves new phenomena, and have indeed always occurred. Historically, many indigenous peoples have extensive experience of responding to and successfully negotiating such changes, by modifying existing practices, shifting their resource bases, restructuring their relationships with the environment or altering their land use/settlement patterns. This in-depth knowledge may provide crucial insights into ways that human societies can adapt to this most recent chapter in global environmental change, and UNESCO is working to gain recognition for this knowledge.

Selected activities of interest

World Heritage and the Arctic

An International Expert Meeting in Narwick, Norway (30 Nov-1 Dec 2007)

72. The international expert meeting on World Heritage and the Arctic was attended by 27 participants from 8 countries (Canada, Finland, Greenland/Denmark, Iceland, Norway, Sweden, Russian Federation, United States of America), including representatives of the Saami Council, Inuit Circumpolar Council (ICC), Russian Association of Indigenous People of the North (RAIPON), Gwich' in Council International (GCI), as well as Representatives of UNEP/Grid Arendal, Conservation of Arctic Flora and Fauna (CAFF), the World Conservation Union (IUCN), the International Council on Monuments and Sites (ICOMOS), the Nordic World Heritage Foundation (NWHF), the Prince Albert II of Monaco Foundation for the Environment and the UNESCO World Heritage Centre. The participants recognized the Arctic Council's "Arctic Climate Impact Assessment" (ACIA in 2004), integrated into the results of the "International Panel on Climate Change" (IPCC) and welcomed the World Heritage document "Strategy to assist States Parties to implement appropriate management responses" (2007) and the "Policy document on the impacts of climate change on World Heritage properties" adopted by the General Assembly of the States Parties of the World Heritage Convention in October 2007. The meeting recommended that further attention be given to impacts of climate change on the natural and cultural heritage of the Arctic due to their specific vulnerabilities.

Climate Change and Indigenous Peoples: impacts and responses

73. I*nternational Panel in the framework of UNESCO's General Conference Exhibition on Planet Earth at UNESCO Headquarters, Paris (17 October 2007)*

This panel was organised by UNESCO's Local and Indigenous Knowledge Systems (LINKS) Programme, with assistance from the Secretariat of the Convention on Biological Diversity and support from the Canadian Commission for UNESCO. The looming challenge of climate change was discussed by indigenous experts from each of three vulnerable environments: the Arctic, small islands and high altitudes. The speakers described how climate change is affecting their communities and ways of life, as well as the manner in which indigenous people are managing, responding to and negotiating these changes. The session highlighted how indigenous knowledge and observations may contribute to understanding, monitoring and adapting to climate change. Speakers included: Otilia Lux de Coti (Maya, Guatemala), Executive Board member and Member of the UN Permanent Forum on Indigenous Issues; Baron D. Waqa (Micronesian, Nauru), Minister for Education and Vocational Training; Violet Ford (Inuit, Canada), Vice-President, International Affairs, Inuit Circumpolar Conference; Johnson Hugo Cerda Shiguango (Quichua, Ecuador), Indigenous leader from the Ecuadorian Amazon.

Indigenous Knowledge and Changing Environments: Biological and cultural diversities in transition

74. *International experts meeting in Cairns, Australia (19-23 August 2007)*

An international experts meeting on "Indigenous Knowledge and Changing Environments" was organized by UNESCO's programme on Local and Indigenous Knowledge Systems (LINKS) in association with the Australian National Commission

for UNESCO. Against the backdrop of mounting international concern about the impacts of global climate change, specialists from both the natural and social sciences, and indigenous peoples, came together to deliberate on past, current and future responses of local and indigenous communities to changing environments, as mediated by their indigenous knowledge. This event was supported by the Christensen Fund and jointly hosted by the Australian Tropical Forest Institute (ATFI) and the Department of Anthropology, Archaeology and Sociology of James Cook University.

75. **El Agua y los Pueblos Indígenas** *(Water and Indigenous Peoples)*

This Spanish Version was launched at the Sixth Inter-American Dialogue on Water Management, Guatemala City (August 2007)

76. Indigenous peoples from all corners of the globe continue to struggle for acknowledgement and recognition of their unique visions of water, both at home and in national, regional, and international forums. But almost without exception, their voices remain obscured by a mainstream discourse rooted in the conception of water as a mere commodity. With climate change, access to water is set to become an issue of increasing importance. 'Water and Indigenous Peoples' is based on the papers delivered on the occasion of the Second and Third World Water Forums (The Hague in 2000 and Kyoto in 2003) and is published by UNESCO's LINKS Programme in collaboration with the International Hydrological Programme. It brings to the fore some of the most incisive indigenous critics of international debates on water access, use and management, as well

as indigenous expressions of generosity that share community knowledge and insight in order to propose remedies for the global water crisis.

Other Recent UNESCO Climate Change Activities

77. The majority of UNESCO's work focuses on climate science and monitoring. While these efforts do not directly address indigenous peoples' issues, they have important implications for understanding the broader processes of climate change and may provide future opportunities for increased interaction with indigenous peoples and their concerns.

78. The Intergovernmental Oceanographic Commission (IOC) has been playing for many years a catalytic role in facilitating the research and monitoring necessary to understand how climate impacts affect resources and the societies which depend on them, while helping design strategies for adaptation and mitigation. The International Hydrological Programme (IHP) and the Man and the Biosphere Programmes (MAB) work on the climatic and human-induced changes related to the world's water resources and the sustainability of the biosphere upon which all life forms depend. Raising awareness of the linkages between biological and cultural diversity has been a joint preoccupation of the Natural Sciences (SC) and Culture (CLT) Sectors, whose work contributes to the understanding, conservation and management of different ecological and social systems that may be threatened by GCC, including in particular World Heritage sites. Furthermore, climate change is one of the key themes for the Decade of Education for Sustainable Development (DESD), for which UNESCO is the lead agency within the United Nations system. The Education Sector is contributing to enhanced awareness

through activities of the ASPnet (Associated Schools) and the preparation of related textbook and learning materials.

UNESCO and SCOPE policy brief on the Global Carbon Cycle

October 2006

79. What are the likely dynamics of the carbon-climate-human system into the future, and what points of intervention and windows of opportunity exist for human societies to manage this system? UNESCO and SCOPE, in collaboration with the Global Carbon Project, address these issues in a policy brief released in Nairobi at the UNFCCC COP-12 and in Beijing at the Earth System Science Conference

Climate Impacts on Natural and Cultural World Heritage

2007

80. The threats posed by climate change to natural and cultural sites on UNESCO's World Heritage List are outlined in a new UNESCO publication, "Case Studies on Climate Change and World Heritage". The report features 26 examples - including the Kilimanjaro National Park and the Great Barrier Reef - case studies that are indicative of the dangers faced by the 830 sites inscribed on the World Heritage List.

UNESCO's World of Science 5-year Retrospective on Climate

October 2007

81. To celebrate the 5 years existence of the journal ‘A World of Science’, a retrospective on UNESCO and Climate has been published, drawing on previous articles covering

UNESCO's programs in water, mountains, glaciers, arid lands, renewable energy, global observations, oceans, ocean acidification and carbon sequestration, small islands, and climate impacts on cultural heritage.

Future Climate Change Research and Observations: GCOS, WCRP and IGBP

Learning from the IPCC Fourth Assessment Report

4-6 October 2007

Sydney, Australia,

82. The Global Climate Observing System (GCOS), the World Climate Research Programme (WCRP), and the International Geosphere-Biosphere Programme (IGBP) organized a workshop on lessons learned from the IPCC Fourth Assessment Report (AR4) in Sydney, Australia, 4-6 October 2007. The main goal of the workshop was to consider the implications from the IPCC AR4 on future climate research challenges and climate observing strategies with a primary focus on the lessons learned from Working Groups I (The Physical Science Basis of Climate Change) and II (Climate Change Impacts, Adaptation and Vulnerability). It is intended that the workshop provide a major input into the evolution of GCOS and the research agenda for WCRP.

UNESCO-sponsored side event in Bali,

December 2007

Articulating science and education to face the challenge of global climate change: a UNESCO dialogue

83. UNESCO introduced its strategy for action on global climate change, which seeks to integrate climate change in a coherent manner across UNESCO's work programmes. The strategy takes the natural and social science knowledge bases and "moves them downstream" to end users, while seeking to establish a shared ethical philosophy. Participants discussed: who is responsible for making people in vulnerable communities aware of climate change; the need to train journalists to accurately communicate on climate change, including on its equity, social justice and political aspects; and challenges associated with freedom of the press and communicating climate change messages. They also noted the biased distribution of scientific research between the global North and South. UNESCO is finalizing a journalists' toolkit on climate change communication.

UNESCO is Co-organizing the International Conference on Groundwater & Climate in Africa

25-28 June 2008, Kampala, Uganda

84. Current monitoring and assessments of the impacts of climate variability and change on water resources commonly exclude groundwater. This omission is of particular concern in Africa where current usage and future adaptations in response to climate change and rapid population growth, place considerable reliance upon groundwater to meet domestic, agricultural, and industrial water demands. The conference seeks to bring together water and climate scientists from research/academic institutions, government departments, and private sector as well as representatives from international agencies, donors and consortia in order to share knowledge and expertise, and thereby improve

current understanding of the impact of climate and development on groundwater resources in Africa.

UNITED NATIONS UNIVERSITY – INSTITUTE FOR ADVANCE STUDIES

85. Since 2004, the United Nations University (UNU) has been exploring the feasibility of establishing a United Nations University Research and Training Centre (RTC) on Traditional Knowledge (TK). In October 2006, UNU-IAS established an interim office in Melbourne, Australia to work closely with Australian authorities, help develop relevant partnerships and networks and initiate a series of pilot activities to demonstrate the types of activities that the TK Institute could undertake. These activities explore the links between TK and: climate change, novel uses of forest, water management, and biotechnological uses of natural genetic resources.

86. The main upcoming activity on climate change is convening of the International Expert Group Meeting on Indigenous Peoples and Climate Change being organized in April 2008, with the North Australia Indigenous Land and Sea Management Alliance (NAILSMA) and the Secretariat of the United Nations Permanent Forum on Indigenous Issues. The meeting will bring together experts from around the world to consider: the effects of climate change on indigenous peoples; adaptation measures to climate change; carbon projects and carbon trading; and factors that enable or obstruct indigenous peoples' participation in the climate change processes. The meeting will be an important preparatory meeting for a number of meetings later on in 2008. A practical outcome of

the meeting will be to raise awareness amongst the indigenous communities in Northern Australia about how to generate carbon credits for the global carbon market, worth over $30bn in 2006.

87. Another pilot activity being undertaken by UNU-IAS is developing a guide to the carbon markets for indigenous people. Responding to the effects and opportunities of carbon markets is a novel and ground breaking exercise for all concerned, especially indigenous people and communities. The report of the Special Rapporteur of the Permanent Forum (*Oil palm and other commercial tree plantations, monocropping: impacts on indigenous peoples' land tenure and resource management systems and livelihoods*) outlines how communities threatened by negative impacts, desperately need assistance. Even indigenous organizations confronted with the opportunities presented by carbon markets, such as NAILSMA, have called for assistance to gain access to the expertise and resources that would enable them to adequately managing this emerging use. A first step in this assistance is simply raising awareness amongst relevant stakeholders. Many indigenous communities and peoples however have no awareness of the growing importance, opportunities or challenges that this emerging market presents. This UNU-IAS publication is an attempt to address a preliminary need of raising awareness amongst indigenous peoples by explaining the market, the opportunities and how a community might get involved.

88. Further climate change activities are planned for the near future. These include:

- Convene an international experts meeting on the impact of the carbon markets on indigenous peoples.

- Work with communities in Northern Australia to sign carbon credit agreements.
- Support the development of monitoring systems on the impacts of climate change on indigenous communities in Northern Australia, Melanesia, Montane West and Central Asia, the greater American South-West and Northern Africa.
- Work with the World Bank on the Forest Carbon Partnership Fund to explore how indigenous peoples, in particular in the above regions can benefit from Carbon financed forest conservation initiatives, and share the experience gained with an international audience.
- Explore the legal and social consequences of relocating or other adaptation strategies for indigenous people as a result of climate change in Northern Australia, Melanesia, Montane West and Central Asia, the greater American South-West and Northern Africa.

89. In March 2007, the TK Bulletin[12] was launched. The TK Bulletin provides regular reviews of TK issues in the global arena including discussions at relevant international fora, such as the UNFCCC. In collaboration with the International Institute for Sustainable Development (IISD), this service will be expanded to develop a peer-to-peer subscription list providing subscribers the opportunity to share news and announcements with other list members. Analysis of topical issues will be developed in the future.

90. In August 2007, UNU-IAS finalized the outline of a new book on the role of TK titled "Bridging Different Worlds: Traditional Knowledge, Sustainable Development and

[12] www.unu.edu/tk

Global Policy Making". The book aims to provide a non-specialist audience with a deeper understanding of the term 'traditional knowledge' and possible contributions TK can make to the pressing global problems of human survival, development and welfare. The book will also provide an overview of where TK related issues are being considered within intergovernmental negotiation processes. It is hoped that the book will contribute to advancing discussions and policy-making on the possible contributions of TK to sustainable development, ways and means to realize this potential and norms and procedures to protect and enhance the rights of holders of TK and constitute an introductory statement of purpose of the TK Institute by offering an authoritative overview of the subject prepared by a broad-based and high-level set of contributors. It is hoped that a chapter of the book will be written by the Executive Secretary of the UNFCCC and consider the role of TK and indigenous peoples in the climate change regime. More information about the pilot activities is available on UNU-IAS website.[13]

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

91. The Food and Agriculture Organization's (FAO) collaboration with Indigenous Peoples and some of their organizations has to be considered in relation to the Organization's mandate and general approach. FAO was founded to raise levels of

[13] http://www.ias.unu.edu/sub_page.aspx

nutrition and standards of living, to improve agriculture productivity and to better the condition of rural populations.

92. Currently, human activities, such as the use of fossil fuels and land use change, have led to an increase in the concentration of greenhouse gases, trapping heat inside the atmosphere. Global warming already has significant repercussions on human society and the environment. It is expected that if the present trend continues 65 developing countries will by 2085 have lost approximately 280 million tonnes of potential cereal production, while 11 percent of arable rain-fed land will become unproductive. Food trade patterns will shift, extreme events like droughts, excessive precipitation and intense tropical storms are likely to decrease crop productivity, at the same time as pests and pathogens may proliferate and spread, threatening crops and livestock.

93. Biodiversity is presently being lost and will continue to do so, agro-ecological zones are shifting, ecosystem services are being reduced, land is degraded and valuable agricultural terrain is threatened by immersion - a sea level rise of one metre would cause 56 million people in 84 developing countries to become “environmental refugees”.

94. Consequently, as an organisation leading international efforts to defeat hunger, serving both developed and developing countries, FAO is not only concerned with mitigating the effects of climate change (for example by supporting efforts to reduce and/or sequester the emission of greenhouse gases), since climate change is already

taking place, the Organisation also has to deal with processes of adaptation to this reality. FAO's programme on climate change includes:

- the promotion of practices for the mitigation and adaptation of agricultural systems;
- the reduction of emissions from the agricultural sector considering the major objective of ensuring food security;
- the development of practices aimed at increasing the resilience of agricultural production systems; and
- the establishment and improvement of national and regional observing systems, as well as data and information collection and dissemination.

95. FAO is presently contributing to the debate on climate change by assessing available scientific evidence, participating in observing and monitoring systems, collecting unique global datasets and providing a neutral forum for negotiations and technical discussions on climate change and agriculture.

96. In 1988, an “Inter-departmental Group on Climate” was established by FAO to monitor the state of climate change science, to develop the position of the Organization and to participate in international discussions, particularly after the adoption of the United Nations Framework Convention on Climate Change (UNFCCC, 1992) and the Kyoto Protocol (1997).

97. In 2001, an integrated climate change programme based on current activities has been approved with the foremost objective of ensuring food security by developing practices aimed at increasing the resilience of agricultural production systems to the vagaries of weather and climate change, while promoting national and regional observing systems, as well as data and information collection and dissemination.

98. In order to make best use of synergies, FAO collaborates on technical matters with the secretariat and subsidiary bodies of the Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), sister agencies such as the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP), the Secretariats and subsidiary bodies of the Convention on Biodiversity (CBD) and the Convention to Combat Desertification (CCD), as well as regional organizations. A comprehensive presentation of FAO's activities related to climate change and food security is provided at the website of PAIA (Priority areas for interdisciplinary action).[14]

99. Because Indigenous Peoples are often overwhelmingly dependent on the environment for daily living, their communities are among those most adversely affected by climate changes. Furthermore, indigenous peoples count for a disproportionate number of the world's poor and food insecure. At the same time, they have demonstrated an impressive adaptive capacity to inhospitable environments and difficult circumstances. Many indigenous populations also possess a unique knowledge of plant genetic diversity that

[14] http://www.fao.org/clim/

may be needed to fight plant and animal diseases; many also know how to breed varieties that cope with stressed environments, or possess the ability to interpret natural phenomena to forecast weather shifts and respond appropriately.

100. Local knowledge and insights of this kind may provide the basis for developing alternative paradigms to counter detrimental effects of climate change. As a supporting and co-operating agency, FAO's role is to assist member countries to identify potential adaptation options and to support local people in their search for viable alternatives applicable to their particular circumstances. The ultimate goal is not to enforce pre-selected practices or policies on collaborating communities, but rather to inform and promote local dialogue concerning local impacts of climate change and site-specific solutions for reducing vulnerability. Bridging the gap between scientific and traditional practice is fundamental for formulating successful measures to guarantee food security. It is therefore imperative for FAO to collaborate with indigenous peoples and their organizations in a joint effort to counteract climate change and achieve food security for all.

OFFICE OF THE HIGH COMMISSION ON HUMAN RIGHTS

101. The impact of climate change on the environment is now overwhelmingly recognized and increasing attention is being given to the human dimension. However, less is said about the relevance of human rights to the unfolding challenge of climate

change and in particular about how the human rights of certain groups are particularly affected because of their distinctive culture or location.

102. From a human rights perspective, climate change may directly affect universally recognized human rights such as the right to life, food, adequate housing or water. Rights to access information and participate in decision-making are also relevant as States take measures to mitigate the impact of climate change. States have obligations under international human rights law to address disadvantage, threats to human rights and ensure that policies aimed at limiting the effects of climate change are not implemented in ways that discriminate against specific groups.

103. All of these factors have a bearing on the situations of indigenous peoples. Indigenous peoples are among the groups that are most vulnerable to actual and potential detrimental impacts of climate change. They live in the most vulnerable ecosystems so are often the first groups to be impacted by climate change. They are highly dependent on their lands and natural resources for subsistence and their cultural identity is closely associated with the environment and the lands in which they live.

104. These factors place indigenous peoples among the most vulnerable to detrimental impacts of climate change on traditional forms of agriculture, pastoralism, fishing, hunting and gathering and other subsistence activities as well as affect their access to natural resources including water.

105. While the UN's human rights mechanisms have not specifically addressed the linkage between climate change and indigenous peoples' rights, there is a growing understanding about how impacts on the environment may affect the enjoyment of rights of indigenous peoples. For example, the Committee on Economic, Social and Cultural Rights (CESCR) has emphasized, *inter alia*, that activities leading to the denial of indigenous peoples sources of nutrition, as well as those breaking their symbiotic relationship with their lands, have a deleterious effect on their health and constitute accordingly a human rights violation.[15]

106. Following a discussion of the former Working Group on Indigenous Populations (WGIP) on the human rights situation of indigenous peoples in States and other territories threatened with extinction for environmental reasons at its twenty-first session[16], the former Sub-Commission on Human Rights' expert Ms. Françoise Hampson produced a working-paper on this issue[17] and a questionnaire for States with particular reference to the rights of indigenous peoples.[18] Information provided by some Member States suggest that indigenous peoples are especially vulnerable to environmental hazards, inter alia, because they may inhabit parts of the States' territory that are prone to environmental harm.

107. Furthermore, certain measures taken by States to mitigate or adapt to the effects of climate change may also have negative impacts on the human rights of indigenous

[15] CESCR General Comment No 14, para. 27
[16] E/CN.4/Sub.2/2003/22
[17] E/CN.4/Sub.2/AC.4/2004/CPR.1
[18] E/CN.4/Sub.2/AC.4/2006/CRP.2

peoples for example when they involve the removal of indigenous communities from their lands or take away their means of subsistence to develop bio-fuels or forest plantations to combat carbon emissions, so-called carbon sinks. In that regard, the Special Rapporteur on the Right to food has highlighted that indigenous peoples are "particularly concerned about developments in biotechnology…that could deprive indigenous farming communities of their access to and control of seeds and livestock breeds…"[19] and has drawn attention to the fact that "[d]evelopment projects are often carried out without the free, prior and informed consent of those affected, and can threaten the right to food through the destruction or loss of ancestral territories and resources or displacement."[20]

108. As noted by the former Sub-Commission on human rights, in the case of indigenous peoples, particular attention should be given to mitigation strategies involving indigenous peoples' lands, territories and natural resources whose importance has been continuously highlighted at the international level.[21]

UN-HABITAT

109. Although the effects of climate change will be felt all over the world, in general vulnerable groups such as the indigenous peoples will be more affected. In an era of rapid urbanization, primarily in developing countries, cities will be particularly vulnerable,

[19] A/60/350, para. 24
[20] A/60/350, para. 25

[21] E/CN.4/Sub.2/1997/17, par. 5

with climate change adding to and reinforcing existing economic, social and environmental problems. Cities, particularly in developing countries, are not sufficiently prepared or aware, to meet these challenges. Cities need to elaborate strategies and plans, by way of anticipated disaster management, for mitigating and adapting to climate change. UN-HABITAT's mission is to promote socially and environmentally sustainable towns and cities with an overall goal of adequate shelter for all, and also contributes to the slum upgrading, and water and sanitation, targets of the Millennium Development Goals, a mandate which touches on climate change issues on several levels.

110. UN-HABITAT notes the effects of climate change on indigenous peoples; that particularly affected areas are the Arctic region, low-lying coasts and small islands, pastoral lands, mountain areas and rain forests. Consequences of climate change include the loss of land, livelihoods, settlements, investment and heritage. Reactions to climate change effects are being seen, in increased local, rural-urban and international migration. The effects of these reactions can and are leading to conflicts over limited resources and increased environmental degradation; of land, water, shelter, forestry, bio-diversity etc. UN-HABITAT is particularly concerned with the effects on and effects caused by housing and settlements, noting that there are environmental complications in the use of timber for shelter construction and the use of charcoal and firewood for cooking fuel (see Figure 1; Indigenous Peoples and the Climate Change Cycle).

111. Several agencies within the UN System are involved in climate change mitigation and adaptation efforts at different levels (see Figure 2- Indigenous Peoples and Climate

Change- UN role in Mitigation). An example is the collaboration between UNEP and UN-HABITAT, initiated three years ago, on spearheading information campaigns and working on building local capacities on global urban environment issues.

112. On an operational level UN-HABITAT has experience in promoting and providing technical assistance i.e. on treeless construction technologies. At the normative level UN-HABITAT is developing an initiative on sustainable urban development and climate change; the Sustainable Urban Development Network (SUD-Net). UN-HABITAT has also created a Task Force on Climate Change to bring together experiences and knowledge on climate change issues within the agency, and develop an agency-wide strategy on climate change mitigation and adaptation issues on human settlements. UN-HABITAT's strategy focuses on city governance, planning and management, using entry-points such as energy, transport, land use and slum upgrading. The strategy networks with partners at global, regional and national local levels within the framework of the Sustainable Urban Development Network (SUD-Net). Networks for indigenous peoples are invited to participate in the UN-HABITAT SUD-Net initiative.

113. The interaction between urbanization and climate change is particularly important; roughly half of the greenhouse gas emissions are a result of the burning of fossil fuels in the cities for urban transport, whilst the other half results from energy use in buildings as well as for use in appliances, and are thus concentrated in cities. However, mitigation and adaptation measures envisaged at global and national levels have not yet been translated into measures at city and local levels. Immediate action is needed to increase the

sustainability of cities through the re-visiting of land-use plans, transport methods and building design, along with regulation on carbon trading mechanisms.

114. The impact of climate change is being increasingly felt across all sectors; development, environment, economy and security. Also its impact on quality of life in human settlements is particularly affecting poor and vulnerable groups, particularly indigenous peoples. Deforestation, particularly in developing countries, is pushing indigenous families to migrate to cities for economic reasons, often ending up in urban slums. The links between bio-fuels and food security needs to be addressed in the context of national planning for sustainability. Migration, as a result of climate impacts, is compounding the trend of rapid urbanization. Figure 1, Indigenous Peoples and the Climate Change Cycle, illustrates the effect of climate change on the natural habitats of indigenous peoples and how that in turn impacts on climate change.

Cities in developing countries

115. Although cities in developing countries are the source of 25% of green house gas emissions globally, they are suffering as much, if not more, the consequences as the developed countries. Their resources, mitigation and adaptation capacities are poor, whilst they are experiencing higher urbanization rates also seen in the case of indigenous peoples. By 2030 it is estimated that the largest cities are to be found in the developing world. Rising sea levels and tropical cyclones will be affecting low-lying coasts and small islands, and should sea levels rise by one metre, many major coastal cities will be

threatened, including; Dhaka, Rio de Janeiro, Los Angeles, Mumbai, Karachi, Shanghai, New York etc.

Technology, energy and finance

116. Developments in technology and their dissemination are key to mitigating, adapting and building resilience to climate impacts in developing and developed countries. Energy efficiency issues are also at the core of the climate mitigation agenda. A radical change toward more energy efficient production, transport and building is required if the international community is to meet the challenge of providing two billion people with access to modern energy and support countries in reaching their development objectives, whilst mitigating climate change. Technology dissemination and development and working for more efficient energy use both require adequate investment and resources. The Clean Development Mechanism allows projects which reduce greenhouse gas emissions in developing countries to earn emission reduction credits, engaging the private sector in creating low-cost opportunities to cut emissions. The Carbon Market thus offers the opportunity to deliver more cost effective implementation, whilst mobilizing resources providing developing countries with incentives and resources for the mitigation of and adapting to climate change challenges.

UN-HABITAT on Cities and Climate Change

117. UN-HABITAT works towards improving living conditions, adequate shelter for all and sustainable human settlements development, while focusing on the needs of the poor and other vulnerable and disadvantaged groups, including indigenous peoples. The

Habitat Agenda, Millennium Development Goals and other relevant instruments and frameworks related to spatial, economic and social development, as well as human rights, provide guidance to UN-HABITAT's work.

118. To achieve the goal of adequate shelter for all, UN-HABITAT collaborates with governments, civil society and the scientific and professional communities, as well as with other UN agencies (see Figure 2- Indigenous Peoples and Climate Change- UN role in Mitigation). UNEP and UN-HABITAT also initiated a joint effort three years ago, on carrying out information campaigns and building local capacities on global urban environment issues. UN-HABITAT also works with international, regional and local financial institutions, in order to mobilize funding for investments in urban infrastructure and affordable housing. UN-HABITAT focuses on resilience in cities, seeking cooperating with relevant agencies in assisting local authorities in the development of local initiatives to mitigate climate change effects.

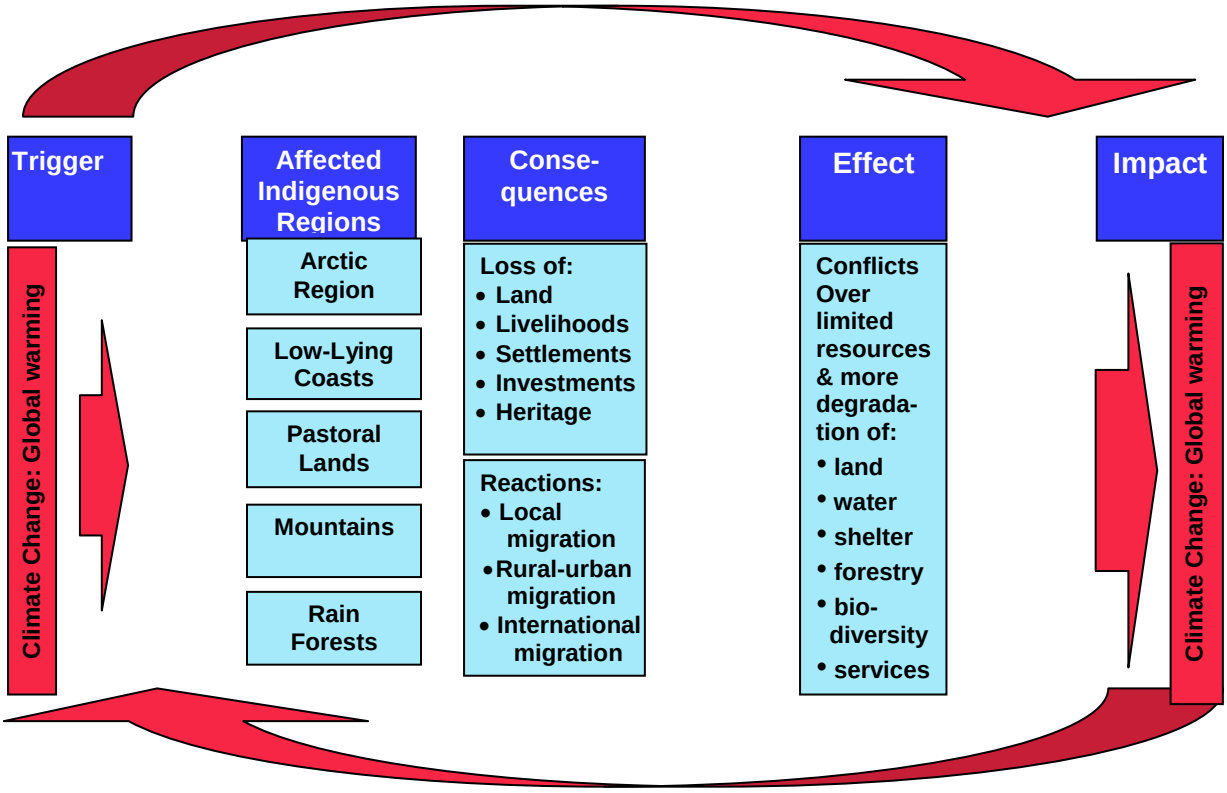
119. Within UN-HABITAT a Task Force on Climate Change has been operationalized, with the aim of creating awareness on climate change issues within and outside the agency; create mechanisms for all sections of the agency to contribute to the development of an agency-wide strategy on climate change; provide a forum for exchange of ideas and experiences on substantive climate change issues to provide inputs to major events; and to provide an agency-wide forum for the development of proposals and training and capacity building materials.

120. UN-HABITAT's strategy focuses on city governance, planning and management, using entry-points such as energy, transport, land use and slum upgrading. The strategy networks with partners at global, regional and national local levels within the framework of the Sustainable Urban Development Network (SUD-Net).The strategy aims to strengthen international cooperation on combating climate change impacts through harmonizing the efforts of cities in developed nations, supporting mitigation and adaptation processes in cities of developing nations and facilitating knowledge transfer and linking these efforts. Networks for indigenous peoples are invited to participate in the UN-HABITAT SUD-Net initiative.

121. The Sustainable Urban Development Network (SUD-Net) in being launched in response UN-HABITAT's recently adopted Medium-Term Strategic and Institutional Plan, and within the framework of the Global Campaign for Sustainable Urbanization. SUD-Net comprises of three main intern-linked areas; urban governance, decentralization and strengthening of local authorities, and environmental issues, noting that disaster prevention capacity at the local level will be enhanced through improved and participatory environmental planning and management. SUD-Net will focus on three climate areas; Arctic cities and towns, tropical and sub-tropical cities and towns with a particular focus on Africa and the Mekong region, and coastal cities and towns. SUD-Net will be launched at the fourth session of the World Urban Forum, in October 2008, Nanjing, China.

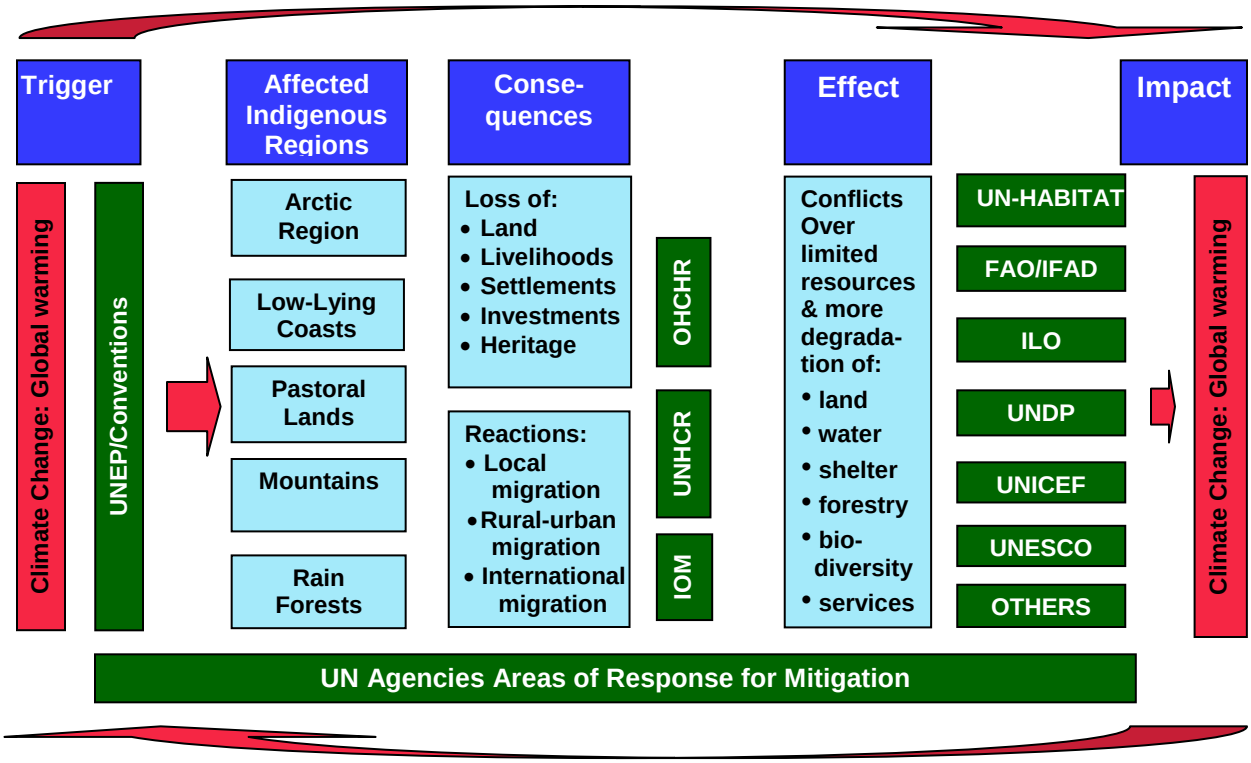
122. As noted in the report of the 2007 Annual Meeting of the Inter-Agency Support Group on Indigenous Peoples[22], and as a follow-up to the Expert Group Meeting on Urban Indigenous Peoples and Migration[23], UN-HABITAT has started the implementation of the EGM recommendation on the development of policy guides to urban indigenous peoples' issues. The first guide in the planned series will be on urban indigenous peoples' housing, and aims to contribute to the more effective realisation of indigenous peoples' housing rights and secure tenure in the urban setting.

Figure 1. Indigenous Peoples and the Climate Change Cycle



[22] IASG Annual Meeting, 17-19 September 2007, Report, para 28
[23] EGM on Urban Indigenous Peoples and Migration, held 27-29 March, Santiago, Chile

Figure 2- Indigenous Peoples and Climate Change– UN role in mitigation



INTERNATIONAL ORGANIZATION FOR MIGRATION

123. While there are a number of factors that displace indigenous peoples from their lands and territories, climate change brings about its own specific challenges that demand the attention of the international community to respond to what has been called "environmental migration". The environmental migration of indigenous peoples may be caused by gradual environmental degradation of their lands, resources and territories or may be caused by a sudden and extreme climatic events such as landslides or flooding. In either case, the marginalization of indigenous peoples is a key social determinant in worsening the impact of these phenomena.

124. As it has been researched, indigenous peoples' lands face more vulnerability due to their remoteness in some cases, and because a number of indigenous communities rely heavily on their territories for their livelihood. Thus the initial and harshest impacts of climate change are faced by indigenous peoples and prompt their migration or displacement. Also, extractive industries or major development works, may generate adverse affects on indigenous peoples' environment. When indigenous peoples' survival is dependent on seasonal crops, fishing seasons, and other resources from their bio-diverse territories, the impacts of climate change including the destruction of ecology and livelihood has forced indigenous communities to migrate. Many, because of their intrinsic cultural ties to their lands, may opt for temporary or circular migration for work to generate supplementary income through remittances. However, as environmental degradation continues, many may be faced with permanent migration due to the loss of their territories.

125. In their host destination, indigenous peoples may face double discrimination: as migrants and as indigenous peoples. Because of discrimination or isolation already felt by indigenous peoples, their need to migrate due to environmental factors may be hampered by limited legal migration options. With limited opportunities to make an informed choice to migrate, or because of sudden displacement by a climatic event, indigenous peoples may be more vulnerable to irregular migration such as trafficking and smuggling.

126. Indigenous communities can play an important role in preserving the sustainability of their environment and eco-system, prevent their economic dislocation and physical displacement. For this, they must become co-authors of any plans to counteract the adverse effects of climate change on their environment. Furthermore, indigenous peoples have proven through their traditional knowledge, the sustainability of their lifestyles and their territories for centuries and it is because of this reason that indigenous peoples must be involved in all plans regarding the preservation of their lands and of local wildlife, including plans to prevent deforestation, drought, or extinction of certain plants and animals.

127. More specifically, in Colombia, IOM recognizes the role that the indigenous people and other ethnic minorities have played and continue to play in the conservation of the environment. Indigenous and Afrocolombian populations in rural areas of Colombia depend highly on the existing resources in their territories and at the same time, their

traditional knowledge plays an important role in the conservation of these resources. IOM promotes the use of traditional knowledge in projects involving these populations including institutional support for the recognition and respect of environmental and territorial rights in national and international legal legislation and consequently, their effect on environmental protection, support to the recognition and effective application of rights on their natural resources, including genetic resources, and their knowledge, technologies, traditional practices and innovations, and support to the full and effective participation of ethnic minorities representatives in international meetings discussing matters on land, territories and environment. Ultimately, actions that create the adverse affects of climate change need to be reversed in order to not force the environmental migration of indigenous peoples.