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IMPLEMENTATION OF ARTICLE 4, PARAGRAPHS 8 AND 9, OF THE CONVENTION

PROGRESS ON THE IMPLEMENTATION OF ARTICLE 4, PARAGRAPH 8

Report on the UNFCCC workshops on insurance

Note by the Chair of the Subsidiary Body for Implementation

Summary

Two workshops were held in Bonn, Germany in May 2003; one on insurance and risk assessment in the context of climate change and extreme weather events, and the other on insurance-related actions to address the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and from the impact of the implementation of response measures.

Discussions covered general issues relating to the role of private insurers in managing natural disasters and climate change risk, and national and international efforts to manage and insure against such risks, as well as specific issues relating to existing risk management schemes, risk assessment methodologies and uncertainties, and risk-transfer instruments in the context of the adverse effects of climate change and of the impact of the implementation of response measures. Participants also identified possible areas for future consideration.

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I. MANDATE

1. The Conference of the Parties (COP), by its decision 5/CP.7, requested the secretariat to organize two workshops on insurance and risk assessment in the context of climate change and extreme weather events, and on insurance-related actions to address the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and from the impact of the implementation of response measures (FCCC/CP/2001/13/Add.1).

2. The two workshops were held in Bonn, Germany, from 12 to 15 May 2003. The workshop on insurance and risk assessment in the context of climate change and extreme weather events took place on 12 and 13 May 2003, chaired by Ms. Daniela Stoycheva, Chair of the Subsidiary Body for Implementation (SBI). The second workshop, on insurance-related actions to address the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and from the impact of the implementation of response measures, took place on 14 and 15 May 2003, and was co-chaired by Ms. Stoycheva and Mr. Halldor Thorgeirsson, Chair of the Subsidiary Body for Scientific and Technological Advice (SBSTA).

II. SUMMARY OF PROCEEDINGS

A. Workshop on insurance and risk assessment in the context of climate change and extreme weather events

3. The workshop was attended by 41 experts in the fields of insurance, risk assessment and climate change, representing Parties, international organizations, research institutions and private insurance companies, and focused on the following main issues:

(a) Overview of insurance and risk assessment in the context of climate change and extreme weather events;

(b) The perspectives on risk assessment methodologies provided by the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC);

(c) Insurance industry perspectives;

(d) National and international approaches to managing and insuring against natural disaster risks;

(e) Public-private partnerships;

(f) Insurance and adaptation/maladaptation to climate change.

4. Discussions and the exchange of information covered the following additional areas: approaches and challenges of insuring against natural disasters; IPCC projections of climate change and their implications for future climate-related risk on developing countries; private insurance industry perspectives in managing natural disaster and climate change risks and some possible constraints to this end; public-private partnerships in insurance and other risk management schemes; microinsurance; and the moral hazard risk of insurance; and integrating climate change and disaster reduction considerations into development planning strategies.

B. Workshop on insurance-related actions to address the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and from the impact of the implementation of response measures

5. Most participants attended both workshops and included experts from countries and agencies that have carried out activities on natural disasters resulting from climate change and from the impact of the implementation of response measures.

6. The workshop focused on the following main issues:

(a) Challenges for managing risk arising from the adverse effects of climate change and the impact of the implementation of response measures;

(b) Approaches to risk management for the adverse effects of climate change and the impact of the implementation of response measures;

(c) Limitations and problems with existing data;

(d) National and international initiatives as possible hedging mechanisms against potential economic losses.

7. Discussions and the exchange of information focused on the following additional areas: challenges for incorporating climate change concerns into risk assessment and modelling; standardization of data collection and methodologies for reporting on disasters resulting from climate change; the role of education and public awareness and capacity-building; existing hedging mechanisms against possible economic losses; and insurance as one element of a wider adaptation strategy for countries.

III. SUMMARY OF DISCUSSIONS

A. Insurance and risk assessment in the context of climate change and extreme weather events

8. An overview presentation described various insurance-related regimes that have been put in place to deal with natural-disaster and environmental risks, including catastrophe insurance and other risk hedging instruments, and the emergence of public-private partnerships to assist in the transfer of risk relating to natural disasters.

9. Participants recalled that the concept of insurance was introduced for the first time in the climate change negotiations by the Alliance of Small Island States (AOSIS), at the third session of the Intergovernmental Negotiating Committee for the FCCC (INC3)¹ in 1991, where AOSIS suggested that a fund should be established to “compensate developing countries (i) in situations where selecting the least climate sensitive development option involves incurring additional expense and (ii) where insurance is not available for damage resulting from climate change”.

10. Insurance losses and overall economic losses from natural disasters have risen dramatically in recent decades. These losses have been exacerbated by such socio-economic factors as the increasing concentration of human communities and economic assets in high-risk areas. In the 1990s, the world suffered disaster losses of at least US\$ 600 billion; two thirds of these losses resulted from extreme weather events, and the rest from seismic events.

¹ (A/AC.237/Misc.1/Add.3). AOSIS also presented a proposal at INC 4 in December 1991, on the creation of an “International Insurance Pool” (A/AC.237/15).

11. The loss increases are primarily due to changes in land-use patterns and population patterns and growth. Although most insurance losses have occurred in industrialized countries, developing countries have suffered a disproportionately large economic cost from extreme weather events, but are much less insured for disasters than are developed countries; the per capita cost in relation to GDP in developing countries is at least 20 times higher than that in developed countries. Disaster death rates are particularly striking, with 95 per cent of the deaths from natural disasters occurring in developing countries.

12. Government insurance programmes exist for a variety of natural catastrophes, including floods, storms, earthquakes, droughts and wildfires. However, governments are finding it increasingly difficult to absorb these costs because of budgetary pressures, and there is a desire on their part to shift more costs to the private market. Despite the increasing sophistication of methodologies to assess extreme weather risk, large uncertainties contribute to high premiums for private catastrophe insurance. This pattern exacerbates the fundamental problem that the citizens of poor and highly exposed countries cannot afford to pay members of a risk or solidarity pool for extreme losses.

13. Insurance company representatives noted that only a small part of the world's population has insurance systems, and that new markets develop very slowly. Reinsurance companies pay for more than 50 per cent of natural disaster losses, and in some cases have paid as much as 99 per cent.

14. Private insurers also face serious constraints in expanding coverage of climate-related natural disaster risks. These constraints have been particularly severe following 2001, which saw the terrorist incident in the United States, a series of severe natural catastrophes, and weakness in the stock market affecting insurance industry assets. Insurance industry representatives indicated that, overall, the industry remains in a vulnerable financial state, and is reluctant to engage in new areas and commit resources to new activities.

15. Most of the representatives from the insurance companies, and some participants, suggested that private insurance on its own may not be sufficient to deal with the growing losses from natural catastrophes. Even in the case of the dependent (or covariant) nature of some risk, insurers added that they have historically been careful to spread their catastrophe exposure widely through diversification and reinsurance.

16. Another issue of concern for the insurance industry is uncertainty. Uncertainty is an inherent and essential condition for an insurance contract, but it is important to distinguish between two types of uncertainty. The first is temporal and spatial; when and where will an event occur? The second is related to the level of confidence in the calculated risk estimates, i.e. the reliability of estimates for potential future losses. The high uncertainty associated with estimating the risk of climate change impacts has serious implications on establishing an effective climate change insurance regime and for developing a framework for the implementation of insurance-related activities in disaster-prone countries.

17. In addressing how and whether insurance-related pools can be accessible to vulnerable, poor communities and countries, and whether private insurers would be interested in covering disaster losses at micro-levels, microinsurance was mentioned as a possible viable option, with the possibility of adopting relevant measures at national and international levels.

18. In this context, it was noted that current ex post recovery mechanisms have no compensatory element as security against sudden losses; rather they serve as palliatives, with the poor left to restart their life from scratch. Against this, the extremely limited scale of microinsurance initiated by some non-governmental organizations (NGOs) in countries such as Bangladesh focuses on life and credit

insurance, with limited health coverage; however, major gaps exist in the coverage of assets and the income base. The poor build either from their own savings or from microcredit.

19. The demand for microinsurance is not currently being met because the poor are unable to pay the premiums. The same is true for many developing country governments, already under budgetary constraints, including from recurring delivery of ex post disaster support.

20. On the issue of expanding the scale of risk pooling nationally, the following elements were mentioned as being important: mobilization of resources by government; provision of mutual insurance among NGOs instead of the current self-insurance model; partnership between private insurers and NGOs, where the former would bear the risk and the latter would engage in marketing and distribution; cross-subsidization on a voluntary basis, where the better-off rural households contribute to a community insurance fund as trustees, with zero compensation to them; and policy-based cross-subsidization, where different incentives can be offered for contributing to catastrophe bonds introduced by the government.

21. It was reiterated that no insurance programmes aimed at covering property losses of the poor due to climate hazards are likely to be viable without government subsidy, especially in the least developed countries (LDCs), where a case may be made for burden sharing and risk transfer internationally via an international insurance pool, as was originally proposed by AOSIS.

22. During the workshop, many other types of insurance-related instruments and systems were presented and briefly discussed. Alternative risk-transfer instruments included catastrophe bonds, weather hedges, and pre-disaster funds. Examples of such diverse schemes that have been established to share risk of natural disasters and environmental catastrophes include flood insurance plans, (such as those in the United States), the National Insurance System in France, the Catastrophe Insurance Pool in Turkey, storm insurance, and other government actions to compensate loss victims.

23. Many of these systems involve public–private partnerships. Such efforts for natural disasters typically involve many actors – NGOs, governments and the private sector. In particular, public–private partnerships between private insurers and governments are especially beneficial for introducing the efficiencies of private insurance into government-led insurance schemes.

24. The Turkish Catastrophe Insurance Pool (TCIP) was cited as a national public–private partnership that involves international support, and the first catastrophe fund of its kind in a developing country. Turkey is highly vulnerable to seismic activity, but most of its citizens cannot afford to insure against this risk. Funded by a mandatory fee on property owners, the TCIP engages World Bank support as reinsurance if disaster costs exceed the funds collected in the pool or an agreed-upon ceiling for the fund. A large part of the additional risk is transferred to the global reinsurance market, with the World Bank providing additional assistance. Total World Bank exposure is less than US\$ 100 million, and private sector exposure is approximately US\$ 1 billion. Unlike catastrophe funds that exist in other countries, such as Mexico, the TCIP is not taxpayer-funded; its revenue comes entirely from property-holders. Additionally, the amount assessed on each property owner varies depending on the risk reduction measures taken and the risk zone, thus creating disaster prevention incentives.

25. Some insurance schemes lead to the problem of “moral hazard”. This refers to an unintended consequence in which the existence of insurance may encourage maladaptation to natural disaster risks, such as choosing to locate housing in high-risk flood-plain areas. Participants suggested that it is essential to minimize moral hazard in insurance schemes, so as to reduce future economic losses from natural disasters. Government insurance programmes have typically been less effective than private insurers at minimizing moral hazard, due to a reluctance to incur the political wrath of the affected population.

26. Important insights were gained on current work being conducted by selected multilateral organizations and financial institutions, such as the United Nations Environment Programme (UNEP) Finance Initiatives, the United Nations Development Programme (UNDP), the International Strategy for Disaster Reduction (ISDR) and the World Bank. All of these are attempting to introduce risk financing into their development programmes, and this was generally encouraged as an important step in disaster risk management.

27. Workshop participants acknowledged that insurance is one of a variety of disaster risk management approaches, and suggested that catastrophe risk management should be an integral part of development planning, at both the national government and multilateral donor levels. It was pointed out that devoting resources to reducing the risk of natural disasters is generally more cost-effective than responding to catastrophes after they occur, and that catastrophe risk management should therefore be integrated into development planning.

28. In this regard, the IPCC has concluded that although uncertainties exist, some extreme events such as droughts, floods, heat waves, avalanches and windstorms are projected to increase in frequency and/or severity due to changes in the mean climate and/or its variability. To date, there is little understanding of what this forecast means for weather-related disasters happening today and in the near future, and a discussion on incorporating the effects of a changed climate into risk-assessment models is only beginning.

29. The question of the extent, if any, to which recent weather losses can be attributed to climate change also remains to be answered. It was generally felt that there are limitations and problems with existing data on natural disaster events, arising from inconsistent and often inaccurate reporting both at the country level and within the insurance industry. Several participants thus urged that greater attention be given to improving and standardizing data collection and methodologies, particularly in, but not limited to, developing countries.

30. It was also noted that risk management solutions may also vary according to culture and regional circumstances. In regions where natural disasters are very frequent, such as where drought occurs regularly, insurance is not a viable risk management option, because the uncertainty – an essential element of insurance – is lacking. For this reason, further research is needed on what may be the best instruments or systems to meet the needs of covering damage or losses resulting from climate change.

31. It was suggested that, as a first step, developing countries, and in particular LDCs, be given support for capacity-building for quantitative and economic risk assessment, skills development and awareness raising for the use of insurance and microinsurance to address the adverse effects of climate change. The LDC Expert Group could be requested to address this issue. As a totally new area, a global study could be undertaken on this issue to devise effective mechanisms and develop appropriate innovative products.

B. Insurance-related actions to address the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and from the impact of the implementation of response measures

32. The first part of the workshop focused attention on the potentially devastating effects of extreme weather events on vulnerable small island states, and the particular challenges for disaster risk management and response measures in these countries, particularly in the face of a changing climate. There are major challenges in incorporating climate change concerns into risk assessment and modelling. In particular, the challenge of differentiating between climate change and climate variability is especially daunting when it comes to establishing a liability-based insurance scheme against weather-related events.

33. According to the IPCC Third Assessment Report, impacts of a changing climate are already being experienced and IPCC projections of future climate change indicate that natural disaster risk and resultant socio-economic losses will continue to increase.
34. The projected adverse effects of climate change are likely to have a disproportionate impact on many developing countries. Low-lying small island states and tropical countries are particularly vulnerable. A heavy dependence on agriculture and relative lack of diversification in many developing countries, particularly least developed countries, increase their vulnerability to climate change and extreme weather events. This exacerbates the fundamental problem that developing country citizens cannot afford to purchase private insurance against these increasing risks.
35. It was noted that there is a continuing lack of awareness in the financial sector and insurance industry of the threat of climate change and its potential impacts on their business. Accordingly, it was suggested that a greater effort be devoted to the implementation of Article 6 of the UNFCCC on education and public awareness about climate change. Some participants, however, questioned whether this lack of interest in climate change was an informed, rational response, rather than a reflection of a lack of sufficient information available to the public.
36. One challenge in incorporating climate change concerns into insurance schemes is the asymmetry between the short-term duration of insurance contracts (normally one year) and the planning time lines for disaster management and adaptation to climate change, which may span decades or generations.
37. There is a distinction between sudden onset extreme weather events, which tend to be more insurable, and slow onset events such as sea-level rise. The experience thus far, and the potential of insurance and alternative risk-transfer instruments for spreading the risks and sharing the losses from sudden onset weather-related catastrophes, may be a useful point of departure for defining how the international community can contribute to risk transfer and loss sharing at the local, national and global levels. Insurance and other pre-disaster risk-transfer instruments have some potential for assisting countries in their adaptation to weather catastrophes and for contributing to incentives for loss reduction. However, it was pointed out that the cost of these instruments can substantially exceed that of traditional state-supported, loss-sharing financing mechanisms. These traditional mechanisms, however, may not be available for very poor countries experiencing severe disasters, in which case risk-transfer instruments that are put into place before the disaster can be an important, but costly, addition to the portfolio of measures available to the national and local authorities.
38. Some of the more promising options may include supporting public-sector risk transfer for highly exposed and vulnerable countries, fostering public-private partnerships as a way of providing insurance to households and businesses, and the possibilities for the international community to support these partnerships. It was suggested that although results to date for microinsurance have been mixed, it nevertheless has potential to contribute to a solution.
39. Active government involvement was highlighted as being crucial in advising local planners on issues such as flooding, promoting stringent building codes and influencing building code legislation to meet the changing requirements in disaster prone areas. Governments can also promote practical research on relevant issues at various universities and institutions, and can take necessary action towards encouraging more effective land-use planning and at the same time discouraging maladaptation practices.
40. The United Nations system is an important source for wide-ranging emergency support through its multiple agencies, specializing in different areas; although it was pointed out that there are limited resources for post-disaster rehabilitation and reconstruction.

41. One important United Nations initiative cited was the Consolidated Appeal Process (CAP). Since 1992, the United Nations has mobilized US\$ 904 million in cash and in-kind contributions and channelled US\$ 37 million directly through the CAP for natural disasters. It also provided cash grants of US\$ 4 million to developing countries through its Central Emergency Revolving Fund (CERF). The World Bank is also investing US\$ 10 million in a weather risk management project aimed at introducing weather hedges in Morocco.

42. There are also some notable national risk transfer mechanisms, for example, the Bermuda Commodities Exchange introduced futures and options contracts based on the Guy Carpenter Catastrophe Index; the Chicago Board of Trade (CBOT) opened for trading in quarterly futures and options contracts based on reported catastrophe losses; the Catastrophic Risk Exchange (CATEX) was established in early 1996 as an Internet-based business-to-business exchange for all types of insurance contracts and related risk management products; CAT bonds, also known as Act of God bonds, first issued in 1996; and the microfinancing initiative, which started in Bangladesh with the Grameen Bank, and expanded to a number of countries with different institutional models.

43. Several participants emphasized the importance of developing systems and the capacity to deal with today's natural disaster events and to integrate disaster reduction into sustainable development policies and plans of action, if we are to be able to adapt to climate change in the future.

44. In the second part of the workshop some participants noted that the effects from the implementation of response measures, for example on terms of trade, international capital flows and development efforts, are unequally distributed and difficult to quantify. There may be both positive and negative impacts arising from the implementation of response measures, and it is important to assess the net impact on a given economy. Countries with fossil-fuel-intensive industries, or which manufacture goods that are heavily dependent on fossil fuels, are particularly vulnerable to any potentially negative impacts of response measures.

45. Instruments to reduce losses arising from the implementation of response measures have not been studied in depth and the contribution of formal insurance might be limited in this case, due to the short duration of contracts and the complexities of calculating premiums, because modelling the magnitude of such losses is not conclusive. One representative from the insurance industry also cautioned that commercial insurers generally do not insure against pure economic losses nor against acts of governments, i.e. the effects of government regulations or penalties for infringement. He also added that one of the major obstacles to the broad distribution of private-sector insurance is the barrier to market entry that some governments impose on foreign insurers.

46. The workshop also examined a variety of possible instruments for alleviating potential economic losses, including hedging mechanisms against possible losses arising from the implementation of response measures (financial derivatives (options, swaps, commodity bonds) for energy products, etc), and other non-formal forms of insurance to hedge against risk, such as oil funds, savings and stabilization funds, and combinations of savings/stabilization funds.

47. Policy makers in countries that derive substantial export and fiscal revenue from exhaustible resources such as oil, coal and gas, have attempted to cushion their domestic economy from the sharp and unpredictable variations in commodity prices and revenues through either savings schemes or stabilization funds, or both. Examples mentioned include Azerbaijan, Chile, Kazakhstan, Kuwait, Norway, Oman, Qatar, United Arab Emirates (Emirate of Abu Dhabi), United States of America (State of Alaska's Permanent Fund) and Venezuela.

48. Whereas these funds have been set up to ensure intergenerational equity, strengthen demand management, maintain competitiveness, and make expenditure less driven by the availability of short-term revenue, the outcome of their experience has so far been mixed, in part due to lack of transparent and appropriate saving and withdrawal rules and a medium-term fiscal framework. It was noted that these funds cannot be a substitute for sound fiscal management. Some participants emphasized the need to look into the possibility of establishing an international stabilization fund as an insurance mechanism to help address losses arising from the implementation of response measures.

49. Economic diversification was mentioned as the best approach, in the long term, against the potential loss of revenue from export commodities that may be affected by the implementation of response measures to climate change. Examples of such diversification included geological carbon sequestration strategies which, if achieved in a low-cost and reliable manner, offer the potential to alleviate or reduce the need to reduce fossil fuel consumption, and could thus be one option for minimizing the potential impacts of response measures. The promotion of renewable energy sources can also lead to diversification of energy sources and consequently a diversified economy. It was also noted that the lack of economic diversification in some oil-exporting countries adds to these countries' vulnerability to changes in demand and price of this key export commodity.

IV. ISSUES FOR FURTHER CONSIDERATION FROM BOTH WORKSHOPS

50. Article 4, paragraph 8, of the Convention calls upon Parties to "consider" actions, including those relating to insurance, to meet the specific needs and concerns of developing countries with respect to both the adverse impacts of climate change and the impact of the implementation of response measures. But the term "insurance" is not defined in the Convention or in any decisions of the Conference of the Parties, and for this reason the term does not refer to any specific kind of risk transfer or collective loss sharing instrument.

51. There is a need to develop systems and the capacity to deal with today's extreme weather events and to integrate disaster reduction into sustainable development policies and plans of action if countries are to be able to adapt to climate change in the future.

52. Insurance is only one possible instrument to cope with climate change risks. Publicly funded mechanisms might encourage maladaptation, and for this reason particular attention should be given to adaptation and prevention of losses, in addition to risk spreading. At the same time, it is critical to involve the private sector through public-private partnerships to ensure that countries have a stake in defining disaster response measures when exploring alternatives for adequate climate disaster relief.

53. Risk assessment is an important and indispensable tool for coping with the adverse impacts of climate change. There are still many limitations associated with existing risk assessment models for estimating the future scale of risk from weather events resulting from climate change. There are also questions on whether climate-related stresses and risks could effectively be distinguished from other socio-economic stresses. The uncertainty in estimating the risk of losses resulting from climate change is currently too high for insurance companies to make reliable assessments of the evolution of the industry in this context. Technical cooperation, including a dialogue among insurance companies, climate scientists and policy makers, is needed to address these limitations.

54. Considerable scope might exist for cooperation between the climate regime and the disaster relief community, and in this regard synergies between the various United Nations bodies should be explored to ensure more effective disaster relief and prevention, as well as more effective use of existing funds.

55. Developing countries can benefit from capacity-building efforts for the development of risk assessment for weather-related and other disasters, both for improving the insurability of the risks and for

improving their management. However, risk assessment can be very resource intensive. Catastrophe models developed for insurers can cost hundreds of thousands, if not millions, of dollars.

56. Measures which can be undertaken to reduce human and social vulnerability include risk assessment, education and information management, land-use planning, environmental management, protection of critical facilities, and application of science and technology in all fields, including for early warning.

57. Stabilization funds and domestic savings funds are important initiatives used by countries to cushion their domestic economies from the sharp and unpredictable variations in oil prices and revenues. An extension of such funds to the regional or international level may be a viable option that could be considered further.
