# CLIMATE CHALLENGES AND RISKS: INTERNATIONAL SYSTEM OF ADAPTIVE GOVERNANCE

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**Abstract**

*Due to failures in adaptation to global climate change impacts and related risks of natural disasters the safety of human wellbeing, economic sectors, and infrastructure is challenged worldwide both in developing and developed countries. We analyze major features, trends and transformations in societal responses to adverse climate consequences and in global adaptation to escalating disaster risks attributed to climate variability. The focus is on the recently dynamic formation of international system of adaptive governance - an integral segment of global climate policy along with climate mitigation: its formation is based on cross-level coordination, interplay and interaction between its actors, and on combination of context-specific factors from different geographies. Recent shifts in international discourse on climate loss and damage which is among the key indicators in assessment of climate risks and responses are outlined; problems in its incorporation into the climate international regime under the UNFCCC and controversies in global North-South dialogue on climate responsibility, liability and compensation are explored. It is followed by analysis of the recent breakthrough in climate multilateral negotiations underway during the last three decades over the institutional architecture of climate adaptation regime and its mechanisms of international aid for climate risks reduction in the global South. Prospects for performance of the novel international financial mechanism under the UNFCCC, i.e. the multilateral Fund for climate loss and damage in most vulnerable developing countries are discussed, along with its expected contributions to sustainable development.*

**Keywords:** climate risks, adaptation to climate impacts, adaptive governance system, international regime, Fund for loss and damage, international aid for sustainable development

## I. Introduction

Today, climate change challenges are at the top of global risks agenda and active international discussion about design of possible responses to growing climate variability and its impacts on ecosystems and societies are among priorities within dynamic global discourse. According to the last *Global Risks Report* [1] during the recent years climate risks acquired stable ranking among top-5 global risks along with geo-political and socio-economic challenges to global sustainable development, to well-being of the planet and its residents. Combination of two major interlinked segments in the system of human responses to climate change, i.e. *mitigation* through limitation of greenhouse gases emissions (GHG), and *adaptation* through reduction of climate risks and societal vulnerability - are among its core attributes.

So far, certain imbalance in climate actions of the international community along these two tracks is noted. The priority is the innovative set of measures for emission reduction through global transfer to low carbon development to meet long-term targets of the 2015 Paris agreement to limit global warming by 1.5-2.0˚C by the end of the century. But, due to serious gaps in

mitigation profile it might be rather difficult to achieve these ambitions[1]. As a result human society would be facing a challenge of *living with risks* of climate change. At the same time disproportionally modest attention has been paid to advances in human responses and to adaptation to climate impacts, particularly to emergency natural disasters such as floods, forest fires, heat-waves, cyclones, etc., and to slow on-set processes like sea level rise, desertification, permafrost destruction, etc. Until recently, this segment of climate policy and measures has been overlooked, and adaptation of countries, regions, economic sectors, infrastructure and communities worldwide has been proceeding too slowly, it had been underfinanced and poorly prepared. Disproportion in global climate financing is recorded: about one third of total climate finance is allocated to adaptation, while the rest is transferred to emission reduction actions [2].

The World Meteorological Organisation (WMO) warns that each consecutive year of the current decade has been warmer than the previous one, and this trend is accompanied by increase in intensity and scales of floods, heat waves, storms, droughts and wildfires. Safety of human wellbeing, economic sectors, and infrastructure are seriously challenged. Recent global loss and damage statistics alarm. In 2023 about 185 million people were affected by extreme events, while fatalities reported as 95 000 were of highest figure on record since 2010 [3]. Natural disasters culminated in US$380 billion world economic losses, and this year is considered as the 'most expensive' in the current century in terms of climate disasters mitigation costs. According to expert assessment future loss and damage mitigation costs might be rocketing.

These trends towards escalating climate risks are attributed to a combination of natural and societal factors: they are defined not only by exposure of countries and individuals to climate change impacts and related disasters depending on their geographical location, but also by unwise, or ineffective human actions. Settlements in river floodplains and flood prone marine coastal areas, violation of construction norms, failures in territorial planning often result in aggravated risks [4]. They are faced by all groups of countries worldwide independently from the level of socio-economic development; although their vulnerability might be inversely proportional to success in their sustainability advances and capacity-building for response action. Significant spatial variations from the standpoint of societal resilience, vulnerability and adaptation response are tracked globally. Climate action failure at various governance levels is also among important drivers: part of the reason - adaptation gaps to adverse climate change consequences worldwide. In some cases, 'black swans' and possible surprises from climate impacts might also be amidst a combination of factors, particularly due to high uncertainty in future scenarios of climate dynamics, its impacts on ecosystems, and results of natural and societal systems interaction.

Climate change bears cumulative consequences both for ecosystems and human systems. As a result it has societal implications, including for socio-economic development, human welfare, infrastructure and services, institutional and technological shifts. Our research suggests that a variety of climate change impacts worldwide envisage assessment of both - their negative consequences and potential development opportunities, although the former ones appear to be dominant. Among possible benefits, for example, might be a accelerating seasonal decline of the Arctic sea ice cover which possibly provides for new access to remote areas and transportation opportunities in the North. Today, the resilience of societies to climate change impacts is far from desired and vulnerability (sensitivity and deficit in response capacity) to harm from natural disasters has been growing both in countries of global South and global North. We base our discussion about climate change challenges and risks to the society on the International Panel on Climate Change (IPCC) approach according to which the risk is the potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. In the context of climate change impacts, risks result from dynamic

[1]. Meeting by the end of the century the Paris agreement's goal to limit global warming by 1.5°C requires reduction of world GHG emissions by 45% by 2030 (2°C - by 30%). Assessment of 192 climate national reports of its member-states according to standard criteria of 'nationally determined contributions' indicates that by 2030 the world emissions might be 58.7% higher than their base level in 1990.

interactions between climate-related hazards with exposure and vulnerability of the affected human or ecological system to hazards.

This article focuses on analysis of human responses to climate risks and how they are addressed through adaptive governance at local, national, international levels. In this package we concentrate on major features and trends in international adaptation system which is characterized by a combination of significant innovations along with serious gaps. It is being gradually shaped and *international regime for global climate change adaptation* is currently under formation, particularly within the 1992 United Nations Framework convention on climate change (UNFCCC) with its 2015 Paris agreement and related institutions.

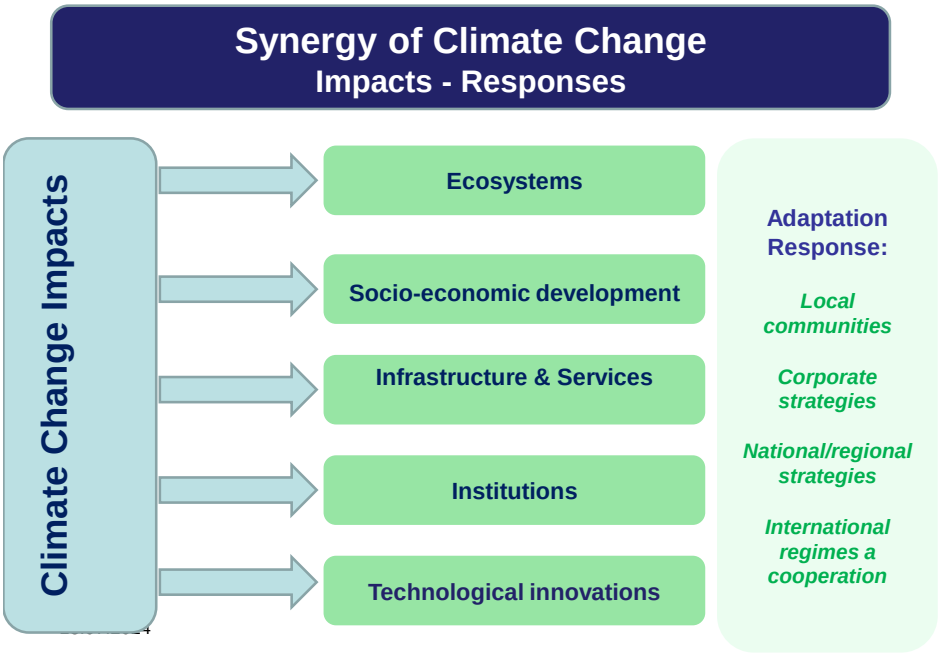


**Figure 1:** *Synergy of climate change impacts-responses*

## II. Methods

A *mixed methods approach* was used in this study, including a combination of qualitative research methodologies and case studies [5]. Qualitative analysis drove the initial identification of major dimensions, trends, combination of drivers and general features of the current system of adaptive governance of climate change impacts [6]. Verification of its core attributes and exploration of their correlations (or deviations) with the major properties in formation of international regime on climate adaptation under the UNFCCC, including assessment of its design and features in implementation of its regulatory frameworks was undertaken. Qualitative approach was also used to help interpret and illustrate major findings. Case study analysis provided the evidence about approaches and practices in natural disaster risk reduction in a number of countries in Asia, and about trends in problem-solving in climate related risk reduction in case of floods as a result of (a) ice melt and sea level rise, and (b) regular river flooding. Application of polycentric approaches [7; 8] in analysis of adaptive governance system and its international frameworks allowed to unpack the causal linkages within the 'impact-response' governance chain, the drivers and limitations from the local contexts, interplay of actors and institutions. Its use application is s results are highly important for explanatory analysis and assessment of outcomes from cross-scale actions of actors and of instruments used for enhancing compliance both with the frameworks of international climate adaptation regime and domestic regulations. On the basis of assemblage thinking [9] we approached the quest of international

coordination, integration, interplay of conflicting interests and compromises not only in climate policy decision-making but also towards meeting the 2030 sustainable development goals [10]. The list of research methods and approaches applied includes:

- Qualitative analysis
- Case-study research
- Polycentric approaches
- Assemblage approaches

This study aggregates our findings from a set of research projects in the field of sustainable development, international and regional cooperation in climate adaptation and disaster risk reduction, implementation and effectiveness of international environmental regimes. Among sources of information are data-bases of the UNFCCC, including documents and proceedings from the conference of the parties, reports of its Warsaw International Mechanism (WIM), the set of submitted eight national communications from Annex I and Non-Annex I parties and aggregated inventory data. A series of the recent international assessment reports on state-of- the-art in global and regional climate adaptation, IPCC reports, updates on climate change impacts and climate risks served as sources for analytical interpretation.

## III. Results

This article contributes to research exploring the major features and trends in development of the new global system of adaptive governance dealing with human responses to climate change impacts, and particularly to extreme natural disasters which are resulting in regular annual growth of loss and damage worldwide. Its major innovation - formation of the international regime on adaptation to climate change, which is among the top challenges at the global risks agenda. Results presented for discussion are the following:

Our analysis indicates that adaptation to climate change impacts although being an equally important (along with mitigation) segment in global climate governance had not been its major priority until recently. As a result, the latest international assessments point at failures in adaptation response with safety of population, economic sectors and infrastructure being under risk worldwide, and particularly in vulnerable countries of the global South. Today, encouraging innovations in adaptation are starting to shape across different levels – international, regional, national and local, across groups of stakeholders and geographies. The system of adaptive governance emerges, and its design is rooted in synergy and coordination of responses to current and future climate risks and to development opportunities. It aims at taking into account and making flexible adjustments to the specifics of the environmental and socio-economic contexts in different geographies, combination of drivers and barriers, including possible 'black swans' effects with unforeseen consequences under high climate uncertainty, as well as causal linkages and interplay of actors and institutions involved in adaptation action.

Climate adaptation turns into a new important cluster in global architecture of interactions between the states and in international climate policy and measures. Today, this process is accompanied by (a) the transfer from concept to practice, and (b) dynamic formation of international regime on climate change adaptation with a set of principles, norms, rules and institutional procedures coordinated between its parties. It is progressing under the 1992 United Nations Framework convention on climate change (art.7) and its 2015 Paris agreement containing the adaptation regulations (art.42-65). Shifts towards implementation are enacted by its recent Framework for Global Climate Resilience in order to perform the Global Goal on Adaptation with its step-by-step strategy, concrete time-frames and instruments for adaptation action worldwide. In 2022 the breakthrough in adaptation regime was marked by the culmination in the global North-South climate negotiations which have been underway during the last three decades: the adaptation finance mechanism for international development with its multilateral Fund on Loss

and Damage (FLD) to support adaptation and damage reduction in developing countries vulnerable to climate impacts was established.

We suggest that loss and damage (LD) attributed to impacts of climate change is among the core indicators in assessment of climate risks worldwide and in design of response adaptation, including the global level. So far, there is no unified definition of climate LD and expert approaches and perceptions within the ongoing international discourse are diverse, especially regarding concepts, typology, methods for cost estimate. The major controversy in the North-South climate dialogue is centered on the issue of climate responsibility, liability and compensation of LD attributed to climate change impacts for the developing countries; particularly conflicting approaches of the parties relate to interpretation of compensation of harm caused. They appeared to be a long-standing barrier in adaptation regime formation. By 2022 part of the impediments had been lifted via a compromise in North-South dialogue based on coordination of approaches on adaptation finance with establishing the mechanisms of international support for adaptation in most vulnerable developing countries. At the same time no accord had been reached on liability and compensation: Paris agreement includes general LD provisions, but it lacks jointly agreed norms on climate liability and compensation.

The newly established international climate finance mechanism with its multilateral FLD marks a special track in formation of international regime on climate adaptation, and advances in its financial mechanisms. It is to be seen how effective its performance would be after its mechanisms are enacted. But, it signals about creation of a niche for institutionalizing and channeling the international support for adaptation in the global South, which had been significantly underfinanced being about 10-18 times lower than the needs of the most vulnerable countries. It is supposed also to be an integral part in already quite diversified international system of climate finance with its specific focus on climate adaptation and international development cooperation through funding, technological support and domestic capacity building in developing countries vulnerable to adverse climate impacts. We conclude that international development funding should be always packaged with transfer of technology, competences and best practices, because as a single, although quite appealing instrument, it is not able to solve the complexity of international development problems and adaptation capacity building in recipients.

The role of this new adaptation finance mechanism and its FLD within the current constellation of international climate development agencies is supposed to be defined by its ambition to refine international adaptation funding channels and promote easier access to resources for its recipients, through involving innovative schemes for preferential funding, climate risk financial management, operational access to allocated funds in case of disaster emergencies. Among its functions – institutional coordination at the global level between international agencies involved in actions for climate LD reduction. The recent estimate of FLD total funding pledges from potential donors is quite modest so far in contrast, for example, to the Green Climate Fund with its record of mobilized funding ($ 12.8 billion). Fragmentation and insufficient coordination between climate development agencies could be considered as a significant flaw in their multilateral climate action. Despite the targeted annual international climate finance is planned to be increased up to US$ 100 billion level starting from 2025, the existing global profile indicates that there might be some concerns about its feasibility in practice. On the other hand, the existing assemblage and growing interplay of climate funds at various levels indicate at emerging global trend towards tighter partnerships between global agencies and organizations contributing to various aspects of climate adaptation and disaster risk reduction, including WMO, UNEP, UN Disaster Risk Reduction (UNDRR) and The Global Facility for Disaster Reduction and Recovery (GFDRR): the results of their combined efforts might be important in such priority areas as enhancing climate resilience, global systems of operational forecasting, Big Data, climate services and exchange of adaptation knowledge. Contribution of such partnership for meeting the 2030 global sustainable development goals might be among its effective outcomes.

# IV. Discussion

## I. Adaptive governance system

*Adaptation* is the process of adjustments of the society to actual or expected climate and its effects in order to either lessen or avoid harm, or exploit opportunities for sustainable development [11]. Ensuring safety of the population, critical infrastructure and economic sectors is the top priority of the emerging global *adaptive governance* system and its actors. Since recently adaptation instruments and measures are becoming diverse worldwide, but still adaptation is proceeding too slowly and adaptation practices are highly fragmented to effectively address risks and ensure human safety.

Our approach suggests that to be of a success the system of adaptive governance should be further refined. It is to be rooted in integration of climate adaptation policy and measures performed at international, national and local levels, while adaptation strategies, mechanisms, tools, monitoring and verification procedures over implementation be coordinated across geographies, levels and with stakeholders. Innovations in this package involve transformations in institutions, legal and socio-economic instruments, technologies, financing and changes in population behavior to reduce vulnerability to climate risks. Effective adaptation strongly relies on taking into account the specifics of the domestic environmental and socio-economic factors. Selection of adaptation options is a tricky task, as it requires multidisciplinary approaches and stronger links between natural and social sciences. Institutions should be flexible and maneuvering [12] under high climate uncertainty deriving from scenarios of global warming and variety of risks and surprises to society, depending on ecosystem change and socio-economic and geopolitical dynamics; climate institutions might be vulnerable to 'black swans', i.e. unpredictable events with unforeseen consequences. The overall quest relates to design of response and adaptation actions for implementation of global climate change regime.

Recent trends indicate at certain advances in global development of both domestic and international adaptation practices. Today the adaptation is launched by many countries and communities. About 84% of the parties to the UNFCCC elaborated their adaptation policy and measures; the number of such countries is constantly growing – by about 5% annually. Their adaptation policies are quite diverse, and include plans and strategies, domestic legislation, national- regional policy and measures, institutions, socio-economic and financial instruments, engineering tools and structural measures (dams, levies, construction requirements, territorial planning, relocation of settlements and business from areas under disaster risk, etc.). In some countries economic instruments applied suggest credits and subsidies for house construction reinforced against floods, incentives for adaptation of local production, support of small business and indigenous communities, insurance services, etc.

A number of serious gaps in adaptation is indicated worldwide, both in developed and developing countries. Among them, is inadequate funding for measures against risks of extreme events, particularly in developing countries. Today, international allocation of funds to climate adaptation in developing countries is about 10-18 times lower than their actual needs, and this divide is constantly growing. International public finance flows to developing countries in 2021 accounted for US$21 billion [2]. According to recent international estimates annual costs of adaptation in developing countries could increase up to US$ 215-387 billion per year during the decade 2021-2030 and up to $315-565 billion by 2050[13]. At the same time experts note that high level of funding cannot compensate for adaptation shortages. To be of success the system of adaptive governance needs to be wisely designed as many failures in response to climate risks are associated with mistakes in selecting governance options. For example, in North-South international aid to adaptation, the finance is among its key elements, but at the same time in many cases, the technology transfers and domestic capacity building is underestimated. Fragmentation of current domestic and international practices is among flaws of adaptation, while

exchange of good practices is insufficient. The list of gaps in adaptation governance also include: 1) deficit in coordination between institutes, sectors and stakeholders; 2) problems with integration of adaptation mechanisms into territorial planning; 3) insufficient participation of local population in risk reduction and involvement of different stakeholders; 4) corruption related to resources transfer from the center to locales; 5) focus on short term projects versus sustainability within a long perspective, etc. Most of them refer to both developing and developed countries.

Adaptation to impacts of global climate change is becoming an important new area of climate international law and policy. Today, the *international regime on climate adaptation* is under formation within the 1992 UNFCCC and its 2015 Paris Agreement. The Paris Agreement establishes the long-term global goal to carry out measures and policies to "enhance adaptive capacity and resilience and reduce vulnerability, with a view to contributing to sustainable development" (Art. 7, c. 1). It describes adaptation as a global challenge "faced by all within local, subnational, national, regional and international dimensions, and a key component to the long-term global response to climate change to protect people, livelihoods and ecosystems". Adaptation measures take into consideration the individual characteristics of countries and regions, "vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems" (Art. 7, c. 1, 2, 5).

Common international standards, norms and regulatory procedures had been introduced. For example, country-parties contribute to the implementation of their commitments under the global climate regime by regularly submitting to the UNFCCC secretariat their national communications according to the standard format of reporting on adaptation work undertaken and for follow-on verification. Adaptation section in national reports contains the following data: (1) assessment of risks and consequences of climate change for territories, industries, and populations; (2) policies; (3) strategies and programs; (4) measures, mechanisms, and instruments; (5) climate services for end-users; (6) research results; (7) implementation of plans, and related gaps; (8) international cooperation; (9) assistance to developing countries. For disaster prone regions the regulatory norms of the Paris agreement relating to climate risk reduction, damage prevention and exchange of competences are particularly relevant, including international provisions for early warning systems, emergency preparedness, rescue and evacuation, rehabilitation of affected territories, risk assessment and management.

The novel trend is in shifts from earlier declarative to concrete step-by-step approach in implementation of international adaptation regime. It is applied for the entire adaptation cycle – from (a) assessment of the core climate impacts and vulnerabilities of countries, to (b) domestic planning, (c) voluntary adaptation action, (d) monitoring and assessment of results, (e) exchange of good practices, including technology-engineering solutions, funding, capacity-building. In 2023, the *UAE Framework for Global Climate Resilience* was adopted at COP-28 (UEA, Sharm-el-Sheikh) [2]. For the first time, this program builds the multilateral adaptation system for realization of the Paris agreement *Global Goal on Adaptation* in order to jointly contribute to safety of world population, economic sectors, infrastructure, and ecosystems facing current and future adverse consequences of climate variability. The innovation is in clear norms for structuring the governing institutions, adaptation strategies, instruments and verification tools, enhancing transparency and compatibility of multiple domestic practices. Refining the system of international indicators and adaptation metrics to measure the progress in reaching global adaptation goals and to verify reporting of the parties is among its tasks. New adaptation funding mechanisms and instruments are to be developed in order to increase financial flows, and to provide direct and easier access to them by developing countries, including wider use of preferential finance and grants.

Importantly, particular time frames are set for this process. For example, by 2025 it is planned to finalize development of national adaptation plans, policies and measures with their

[2] UN FCCC. Decision -/CMA.5 Glasgow–Sharm-el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3 https://unfccc.int/documents/636595

disaggregation across sectors, regions and communities; by 2027 - to enact international and national system of monitoring, assessment of climate risks and inventory of states/regions vulnerability to risks. Among major problems today is that about one third of the world territory is within the risk-prone zone because it has no access to systems of early warnings on disaster emergency, to climate information and services. It is planned to combine a network of multilateral, regional, national systems (with universal coverage by disaster early warnings, regular risk monitoring and assessment, climate services, Big Datat). It is suggested that their development by 2030 would serve as a basis for the UNFCCC plans to undertake the global assessment of implementation results of national adaptation plans with global inventory of domestic practices, and a follow-on refinements of the adaptive governance system.

## II. Loss and Damage

Loss and damage (LD) attributed to impacts of climate change is among the core attributes in assessment of climate risks and possible adaptation measures. So far, there is no unified definition of LD. Current discourse on the issue centers either (a) on evaluation of harm (economic and non-economic [3]) from observed and expected climate change negative consequences and risks, or (b) on critical assessment of international North-South debate on legal procedures for its mitigation under the UNFCCC. Usually LD is understood as adverse effects of climate change that are not avoided through climate adaptation, or mitigation efforts. Loss is linked with irreversible harm, for instance through complete destruction in functioning of assets, infrastructure, sectors (for example, as a result of flooding from sea level rise in small island states). Damage refers to negative effects and costs associated with climate change impacts that could be quantified, and often could be dealt with involving repair and restoration, or compensation.

Still, there is a great deal of uncertainties and diversity in approaches regarding concepts, typology, methods for costs assessment, and structure of measures to deal with the problem; altogether, it sets barriers for dealing with climate LD. Existing estimates of LD and high current and future costs to address them vary significantly. For example, it is suggested that LD costs in vulnerable developing countries might account for $ 400 billion in 2030 and raise up to $ 1-2 trillion by 2050 [14]. Most countries worldwide are under risk of climate disasters, and LD costs vary across countries and regions depending on their vulnerability and exposure to different extreme weather and emergencies. Developing countries face higher risks due to their comparatively lower domestic capacity to mitigate disasters.

International regime formation to address climate LD [15] highlights three important features and new trends. *First*, the process of its dynamic North-South international dialogue over the last three decades resulted in the progress towards multilateral coordination of various approaches and stakes of its parties. It culminated in 2022 in historical decision to establish international financial mechanism for reduction of LD and related risks in most vulnerable developing countries. *Second*, its formation is marked by particular stages in designing its institutions and regulatory norms; it clearly demonstrates transition from perceptions to actions in coordination of joint efforts. *Third*, being rooted mostly within the UNFCCC climate regime, its main vector directs towards designing the global architecture for climate adaptation and addressing LD issues through tighter synergy between currently fragmented efforts of various international agencies at different levels.

The core of the LD multilateral problem has been rooted within the global South- North dialogue, and particularly, in interpretation of *compensation* and *liability* for climate LD. Climate aid to most vulnerable countries and financial compensation schemes for damage caused by historical GHG emissions from developed countries had been the red thread in long multilateral

[3] Economic LD is calculated on the basis of monetary value of damage to economic sectors, infrastructure, individual assets; non-economic LD is more difficult to evaluate as it is associated with non-monetary values like loss of life, health, territory, cultural heritage, biodiversity

debates. Climate justice, 'moral responsibility' and possible climate reparations for damage had been also a part of regular international narrative. Due to complexity of the problem with a great deal of conceptual uncertainties and controversies in North-South approaches to problem-solving, it took over three decades of active debates to reach the compromise through a joint agreement to institutionalize the LD issue.

Indeed, there is a diversity of parties' perceptions regarding options and tools for compensation of climate change damage for developing states. Enacting mechanisms for LD compensation had been the goal of the vulnerable least developed countries, while developed countries had been its opponents. As a result financial support and compensation were in foci of international discussion. Until recently within the climate diplomacy industrialized countries usually managed to block attempts of developing countries to negotiate financial aid for implementation of their domestic adaptation plans. The result has been in 'underfinancing' of global adaptation actions according to the last assessment of UNEP. Among the reasons had been also the existing gap in international legal framework for financing adaptation, as well as in the international legal norms for LD obligations and responsibilities of the countries. Despite recent progress in institutionalizing the funding arrangements, at the last moment of negotiations the developed countries succeeded in reaching a compromise by focusing the international finding discourse on 'cooperation and facilitation' rather than 'liability and compensation'.

A number of stages in International regime formation related to LD regulation and norms could be tracked. In fact, the LD issue entered the international policy agenda under the UNFCCC just from the start of climate negotiations in 1991, when the problem was initially raised by the *Alliance of Small Island States* (AOSIS) by proposing the creation of an international pool to compensate for LD from the sea level rise to the most vulnerable small islands and low-lying coastal developing states. Particularly dynamic this process became during the last decade. After a long period of general discourse on conceptual approaches to liability and compensation the LD reentered negotiations, and with the 2010 Cancun work-programme on LD concrete steps towards its institutional design were taken. In 2013 the *Warsaw International Mechanism* (WIM) for LD was enacted to serve as the lead international structure to coordinate international action towards LD risk management, to enhance knowledge from science and practice in order to develop mechanisms for support and capacity building in the most vulnerable states; it was focused on research, dialogue and knowledge exchange, rather than liability and compensation. In 2015, the important milestone has been the incorporation into the Paris agreement of special provisions to regulate international efforts to 'avert, minimize and address LD' (art.8). In 2019 the *Santiago Network for Loss and Damage* (SNLD) was mandated to focus particularly on procedures and technical aspects of international climate aid to developing countries and to define effective instruments for facilitating access to finance, information, best practices, technologies and capacity building.

Finally, the recent mutual compromise in negotiations suggests that the Paris agreement envisions the continuation of WIM, but explicitly outlines that involvement of the latter does not provide for any liability, or compensation. The inclusion of this clause was a condition on which developed countries, and particularly the USA, agreed to include a reference to LD into the international accord. As a result, a novel architecture for North-South cooperation within international system of climate adaptive governance is developing. Creation in 2022 of the new financial mechanism for support of adaptation in developing countries with its multilateral Fund on LD is important landmark in this process.

## III. Multilateral Fund on Loss and Damage

Launch of international financial mechanism with its special multilateral *Fund for Loss and Damage, FLD* at COP 27 (Sharm-el-Sheikh, UAE) in 2022 is regarded as a breakthrough. It is based on joint multilateral agreement on funding to least developed and most vulnerable states to adverse climate change. Today the operationalisation of FDL is at the agenda, and the key issues

include: 1) governance design; 2) recipients of finance; 3) donors and sources of funding; 4) principles and instruments for actual LD assessment; 5) fund's role in the system of international climate finance. Answers to these basic questions require further detailing and coordination between the parties involved in the regular UNFCCC process.

*Governance* and *operationalization* are the basic issues in the FLD performance. Currently, the decision–making is underway regarding its goals, activity, legal status, governance and institutional procedures, its structure, membership, funding sources, selection of recipients, norms for access to finance, financial instruments, monitoring, reporting and verification procedures, interaction with other international climate finance mechanisms. It is supposed to serve as an operational LD finance mechanism under the UNFCCC. At initial stage the World Bank is supposed to provide the administrative support, consulting and maintenance of its secretariat.

FLD Governing Board is the major organ for consensus decision-making and strategic planning. It consists of 26 members, including 12 from developed countries, 14 from developing states and regional groups, including 3 from each - Asia-Pacific, Africa, Latin America and Caribbean region; 2 each from developing small islands states, and from least developed countries; 1 from developing state - nonmember of the regional groups. The Board has 2 co-chairs – from developed and developing countries. The Secretariat serves as its working body and it is headed by the executive director of the Fund; regional departments are part of its structure.

Recipients eligible for funding are selected basing on the key goal of the fund – support for least developed countries vulnerable to extreme natural disasters and slow on-set processes. Funds are to be transferred to actions in LD reduction and for capacity building to prevent both economic and non-economic damage. They cover rehabilitation of affected areas and support to local population, to reconstruction and restoration of economic assets and infrastructure. International aid is provided to develop national adaptation plans and programs on LD reduction, or to assess the financial needs of the recipients to perform protection measures and develop national finance systems for LD compensation. Perspective direction of action eligible for funding - production of climate data and operational dissemination of climate services to end-users, support for relocation and mobility of people seriously affected by disasters.

Among its main finance instruments destined to the global South are grants and preferential loans. Application of additional financial products are currently discussed, such as guarantees, direct budget funding, politically motivated finance, shares, insurance, risk-sharing, performance-based programs. They are regarded as supplementary to national resources directed to LD reduction measures. Specifics in the national context is taken into account in decision-making on selecting the recipients and instruments applied: climate vulnerability indicators in combination with socio-economic and sustainability parameters are assessed in detail. FDL is developing specific norms for funds distribution, including assessment of potential recipient priorities based on risk indicators, LD indices, national capacity in adaptation, general level of international funding, estimate of costs for post-crisis rehabilitation and reconstruction, etc.

FLD puts is its special accent on procedures and instruments to ensure direct and simplified access of an applicant from a developing country to funding, and to lift administrative barriers for international finance. Funding support in emergency situations should reach its consumers before it's too late. It could be provided through national and regional branches, and on the basis of applications for comparatively small grants for local recipients. Proposed operational allocation of funds through rapid track and simplified procedures for evaluation of applications in case of emergencies is an innovation. It is combined with transparency principles for resource allocations, reporting and verification, avoiding excessive bureaucratic barriers in access to finance. Special institutional procedures are designed to ensure easier access to finance and implementation of aid-programs. National organ responsible for management and realization of actions supported by the Fund could be established in a recipient country. There is a choice of available options: (a) direct access via budget funding of national government, or partner organizations; (b) direct access via sub-national, national or regional organizations, or via partnerships with organs accredited with other international funds, for example, such as the Adaptation Fund, the Global Environmental

Facility (GEF), the Green Climate Fund; (c) international access through multilateral or bilateral agencies; (d) small grants for support of local adaptation projects, of indigenous communities, most vulnerable groups and settlements, including their rehabilitation after natural disaster

*Sources of funding* are among crucial issues. Resources of FLD are to be formed from a variety of sources, including donor states with their grants and preferential financing from governmental and private funders, as well as NGOs and different funds. Multilateral LD funding would be mobilized in addition to already functioning multilateral mechanisms of climate finance and international aid to sustainable development. Currently there is a variety of estimates of possibly mobilized adaptation funding. According to UNFCCC estimates by the end of 2023 at the start of FDL launch, several donor states announced their pledges on annual climate finance totaling to about $700 million (including, by the EU – €225 million, Italy – $200 million, Germany – $100 million, UAE – $100 million, with smaller funding from UK, USA, Japan). The effect of such financial mechanism for climate adaptation in developing countries would be tested in practice with the start of FDL performance. Among main concerns is how fast and effectively the operalization of its procedures and coordination of donors-recipients approaches would be undertaken. However, initial estimates indicate that expected funding might be quite modest versus possible annual costs of climate disasters mitigation in developing countries in mid-term perspective. The important question about methods and norms for assessment of actual LD in each recipient county-case, including economic and non-economic damage still remains open.

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