# INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE FIFTH ASSESSMENT REPORT

### WHAT DOES IT MEAN FOR UGANDA'S DEVELOPMENT?

### 21-22 August 2014, Kampala, Uganda



## **Executive Summary**









#### **Executive Summary**

The Government of Uganda, represented by the Ministry of Water and Environment, together with the Intergovernmental Panel on Climate Change (IPCC) and the Climate and Development Knowledge Network (CDKN) hosted the outreach event, the IPCC's Fifth Assessment Report (AR5): What does it mean for Uganda's development. The event took place on 21-22 August 2014 in Kampala, Uganda in partnership with Makerere University. The event aimed to communicate the IPCC's findings to policy and decision makers, the public and private sector, academia and civil society, and to discuss key implications for Uganda's development. The dissemination was also intended to increase the accessibility of the report and to promote discussion and networks between climate change stakeholders in Uganda.

The outreach event was part of a series of outreach events taking place in Africa, Asia and Small Island Developing States. CDKN produced an easy-to-read summary of the AR5 with key messages specifically for Africa entitled 'The IPCC's Fifth Assessment Report: What's in it for Africa'. In addition to the outreach event, CDKN together with the Inter Press Service Africa organised a journalist training, which saw 20 journalists receiving training on the AR5 Report prior to the outreach event. The journalist training included showcasing CDKN's 'media toolkit', which journalists could use to report on the outreach event and the AR5 findings.

The event featured IPCC authors from the three IPCC working groups, who presented an overview of the report with an emphasis on topics of interest to the African region. The two day event was organised in two parts; a one and a half day main event from 21-22 August 2014 at the Hotel Africana in Kampala, and a half day Young Scientists' Seminar on 22 August 2014 at Makerere University, Kampala. The main event was attended by 200 participants, who included IPCC Authors, CDKN Delegates, central and local government officials, donors, civil society and the private sector, as well as participants involved in or concerned with climate change and development. The Young Scientists' Seminar was attended by 85 participants who were mainly young academic staff, researchers and graduate students from Makerere University and Kyambogo University.

#### **Key findings and recommendations**

The outreach event raised questions on the science and how Uganda should respond to the AR5's findings. The following key questions were raised:

- There is a need to mobilise climate change financing where will the money come from and how accessible is it/will it be?
- Mitigation and/or adaptation to what extent is Uganda obligated to act and who bears the burden of climate change action?
- Is Uganda prepared for the changes in temperature and sea level and the impact of potential disasters? There is need to focus on the El Nino Southern Oscillation [ENSO] and Indian Ocean Dipole [IOD] which are key facets of the East African climatic landscape.
- What options exist to reduce GHGs and are they affordable? Can affordable alternative energy options be developed and the existing prototypes scaled up?

Climate change effects vis-à-vis development process - what strategies are in place to counter increased population growth, urbanisation and industrialisation effects on the environment? Can Uganda leverage available opportunities to reduce GHGs?

#### Observations made:

- The upcoming Uganda National Population and Housing Census should provide information that is relevant to developing appropriate climate change policies given the facts presented by science.
- There is need for an army of trainers to ensure dissemination of the climate change agenda to all stakeholders. There is need to raise awareness about the impacts of climate change at all levels of society to enable us to respond more effectively to the risks.
- There is evidence to show that if there were to be an increase in temperatures by 2°C, coffee growing areas would be severely affected.
- There is need for alternative energy sources to reduce heavy reliance on wood fuel.
- The focus needs to be on how to develop with the best available low-carbon technology and not on evaluating responsibility for previous emissions.
- Capacity should be built through learning. Least Developed Countries (LDCs) need to develop projects
  while at the same time building capacity to implement them, otherwise resources may never be
  accessible to them.
- Current climate change literature is focused on transformative adaptation rather than mitigation of what was already emitted.

#### On civil society:

- Civil society needs to change its mindset and not look to financial inadequacies as a limitation in their
  efforts to climate change response. There is therefore a need to strengthen collaboration between civil
  society organisations and government to enhance climate change responses in Uganda.
- Communities need to use available information to adapt appropriately. For example, rainfall distribution is different even for seasons regarded as very wet; statistics of wet and dry seasons would provide correlation for predicting future rainy seasons for people working in Meteorological Units. Scientists in meteorological agencies could use data on correlations between number of dry spells and number of wet spells to predict future trends and advise farmers on short and medium term rainfall pattern changes.
- There is a need for clear laws that should be implemented and not kept on shelves. The private sector needs to be brought on board in implementing these policies and laws.

• The economic partnership and support from the UK and the Netherlands is very important as we engage further in matters of climate change.

#### On science:

- How are farmers expected to overcome challenges arising out of variations in projections and the seasons? Science communication and engaging with the communities is key.
- Uganda could leverage the increased rains for agricultural purposes since the short rainy season is likely to get wetter with more rainfall overall.
- Countries that are likely to suffer greater effects need to invest in mitigation and adaptation. There is a need to leverage available resources and to make appropriate decisions and changes.
- Population growth causes threats on many sectors, thus population should be incorporated in analysis on this basis.
- Population growth is believed to have negative impact, although there were suggestions that it did not have any on the climate e.g. China, India versus Botswana.

#### On Finance:

- The AR5 does not have comprehensive information on costs of mitigation or adaptation. However, the cost of adaptation would definitely be higher in the future and the lack of information on costs should not be an obstacle in planning strategies.
- Where mitigation options are cheapest, governments and businesses are more inclined to allocate more resources for it.
- There is an opportunity to invest in improved biomass technologies, such as clean cooking stoves for households, institutions and industry.
- Investment is needed in improved charcoal production technologies.
- Investment is needed in renewable energy technologies (solar, wind, hydro and geo-thermal).
- There is need for increased mobilisation of funds at national and international levels [GCF].
- The sector should domesticate the IPCC AR5 findings through awareness building and the implementation of recommended actions/technologies.

#### Day One - 21 August 2014

#### The Opening Session

#### Speakers:

- Mr. David O.O. Obong, the Permanent Secretary, Ministry of Water and Environment
- Mr. James Magezi- Akiiki, the IPCC Country Focal Point for Uganda
- Dr. Youba Sokona, IPCC Co-Chair, Working Group III
- Prof. John Dddumba Sentamu, Vice Chancellor, Makerere University
- Mr. Carl Wesselink, CDKN Africa Regional Director
- Mr. Danny Graymore, Head of Office, DfID Uganda
- H.E. Alphons Hennekens, Ambassador of the Kingdom of Netherlands in Uganda
- Hon. Flavia Munaaba, Minister of State for Environment, Uganda.

Hon. Flavia Munaaba, officially opened the event, noting that human influence on the climate system is responsible for increased GHG emissions and thus focused and deliberate efforts to address the issue were a necessity. She informed participants that Uganda has put in place a National Climate Change Policy (NCCP) to guide coordinated climate change responses and that climate change has been incorporated into Uganda's national development frameworks; this includes the Second National Development Plan (NDP II) and Uganda Vision 2040.

Mr. David O.O. Obong highlighted the increasing awareness of climate change by stakeholders in Uganda, a fact depicted by the large attendance at the event. He called on sectors and stakeholders to play their role in implementing the NCCP towards climate change action. He informed participants that the GoU has upgraded the Climate Change Unit (CCU) into a fully-fledged Department of Climate Change (DCC) at the MWE to coordinate climate change action in the country. He emphasised the need for behavioural change through appropriate resource allocation, both human and technical and the need to translate them into planning and budgeting processes across all sectors of the economy.





Hon. Flavia Munaaba, the Minister of State for Environment, MWE (left) and Mr. David. O.O. Obong the Permanent Secretary, Ministry of Water and Environment at the opening ceremony.

Mr. James Magezi-Akiiki noted that the IPCC carries out global assessments on climate change and provide accurate scientific data and information. He informed participants that the IPCC discharges its duties through working groups and panels. Working Group I focuses on the *Physical Science of Climate Change*, Working Group II on *Impacts, Adaptation and Vulnerability* and Working Group III on *Climate Change Mitigation*.

Dr. Youba Sokona emphasised the role of the IPCC's findings, which seek to inform policy decisions and choices. He noted that the IPCC's Assessment Reports are written to be *policy relevant but not policy prescriptive*. He also said that member countries had the prerogative to utilise information provided in the reports according to their needs. He informed participants that the AR5 was the most comprehensive assessment of climate change since 1990.

Prof. John Ddumba-Ssentamu emphasised that climate change action was critical because the majority of Uganda's population depends on agriculture and yet its productivity heavily depends on climatic factors. He also highlighted the role of Makerere University as an academic institution in climate change action, including its innovative teaching, learning, research and services responsive to national and global needs. He re-affirmed Makerere University's support and commitment to working with CDKN and MWE in climate change action.

Mr. Carl Wesselink informed participants that there was a visibly increased sense of political and societal awareness of climate change and its effects. He also thanked the IPCC for supporting its authors to take the climate change message across the world through such outreach events. He noted that the AR5 provided sufficient evidence to help the world make smarter decisions and consider the implications of decision-making in terms of development and human security.

Mr. Danny Graymore acknowledged the important role Uganda continues to play in the development of regional climate change programmes. He informed participants that the UK Government was set to capitalise the Green Climate Fund and would continue supporting climate change activities in Uganda. He recognised various efforts in building an international climate change regime and advised that there was need for ambitious targets that

would help to focus the global climate change efforts. He said there was need to act urgently and move forward quickly and concluded with a statement that 'there is no use dying whilst looking'.

H.E. Alphons Hennekens noted that the Netherlands had long recognised the importance of climate change and taken various measures. He reiterated the timeliness of the IPCC's findings for Africa requires critical response, especially for Uganda, which is highly vulnerable to the impacts of climate change. He confirmed support to climate change resilience programmes in Uganda and expressed hope that the outcomes of the outreach event would help Uganda to better prepare for the emerging climate change effects.





The Media Session: Press Conference

The media session involved question and answer discussion between the IPCC authors, representatives from government ministries and agencies, other key speakers and journalists. The discussion included the relevance of climate change action for Uganda, climate change adaptation at local and households levels, the impact of  $1^{\circ}$ C warming for Uganda, the role of media and civil society in climate change action, climate finance, alternative energy source to mitigate climate change and the oil question for Uganda.



Mr. Carl Wesselink, CDKN Africa Regional Director (middle), CDKN Country Engagement Leader Uganda (left) and Prof. Bernard Bashaasha, Principal CAES, Makerere University (right) at the event

# **Session Two: Climate Change Trends, Impacts and Vulnerability** Speakers:

- Prof. Chris Reason, Lead Author, IPCC Working Group I
- Dr. Hannes Rautenbach, University of Pretoria.

Prof. Chris Reason observed that each of the last three decades has been successively warmer at the earth's surface than any preceding decade since 1850. He noted that there is increased ocean warming, increased water loss and shrinkage, and that Africa would continue to warm during the 21<sup>st</sup> century. He also observed that in general, the tropics were expected to get wetter and the sub-tropics drier. For East Africa, there was little projected change in mean annual precipitation.

Dr. Hannes Rautenbach presented a Uganda climate scenarios report, which is one of the outputs of a CDKN-supported project in Uganda: *The economic assessment of the impacts of climate change study in Uganda*. He observed that differences in heat were big drivers for weather patterns responsible for rain and other weather conditions in Uganda. He highlighted the minimal change in rainfall amounts, although there is significant increase in temperatures. The projected annual rainfall totals (next 50 to 80 years) are expected to differ little from what is presently experienced, with projected changes within a range of less than plus or minus 10% from present rainfall. The projected near-surface temperatures are in the order of +2°C in 50 years from present, and in the order of +2.5°C in 80 years from present.

The discussion centred around use of models and experiences of other continents to determine actual implications and how to deal with rainfall variability and its impact

#### Session Three: Adaptation and Climate Resilience - Best Practice Lessons from Africa

#### Speakers:

- Dr. Katharine Mach, IPCC Working Group II
- Dr. Balgis Osman-Elasha, Lead Author IPCC Working Group II
- Dr. Joseph Hella, IPCC Working Group II

Dr. Katharine Mach observed that the climate change hazards that had occurred had impacted each continent, and that impacts and risks were not about climate but about risks to society; the impacts of climate change are being felt more intensely among the poor and marginalised. Therefore, communities needed to be prepared. For Africa, there were indications that governments were creating structures to mitigate these risks and concluded that there were many opportunities for synergies between adaptation and mitigation but a challenge remained about making decisions under uncertainty.

Dr. Balgis Osman-Elasha observed that adaptation needs were expected to arise when the anticipated risks or experienced impacts of climate change required action to ensure the safety of the population and the security of

assets, including ecosystems and ecosystem services. Climate change was expected to interact with non-climate drivers and stressors to exacerbate existing vulnerability. In addition, she noted that global adaptation cost estimates were greater than current adaptation funding, suggesting a funding gap and a growing adaptation deficit, especially for developing countries. Thus there is need for strengthened inter-linkages between adaptation and development pathways - a focus on building resilience would help to counter the current adaptation deficit and reduce future maladaptation risks.

Dr. Joseph Hella noted that in some areas climate change would decrease energy demand for heating but increase energy demand for cooling, while affecting water supply, transport, production and economic growth in different ways and magnitudes. The high-risk areas include: reduction in crop yield, water supply, housing, human displacement, conflicts and violence, occurrence of disease. The expected effects on Uganda will include food insecurity, landslides and soil erosion, water quality changes, conflicts due to resource scarcity, and changing disease patterns. All these require governments to implement policies that will promote poverty alleviation.

The discussion focused on who would pay for the costs of terrestrial and subterranean impacts on microorganisms. It was noted that the cost of mitigation and adaptation were high but would increase in the future. There were issues regarding the likely impact of population growth on climate change, comparisons of costs of adaptation and mitigation.

#### Session Four: Uganda's Low Carbon Development Opportunities

- Dr. Youba Sokona, IPCC Working Group III
- Dr. Joyashree Roy, IPCC Working Group III:
- Dr. Shuaib Lwasa, IPCC Working Group III:

Dr. Youba Sokona noted that GHG emission growth has accelerated despite reduction efforts, and that most of the recent GHG emission growth is driven by growth in economic activity. Therefore, limiting warming to 2°C involves substantial technological, economic and institutional changes. He observed that mitigation cost estimates varied but these do not have strong effects on global GDP growth. He indicated that mitigation requires a full de-carbonisation of energy supply. He concluded that climate change is a global commons problem that requires international cooperation and coordination across scales.

Joyashree Roy indicated that there is need for an integrated approach to climate change mitigation and adaptation. 50% of LDCs are in an industrialisation drive and should keep in mind that 80% of GHG emissions are from energy supply. With high aspiration for manufacturing, extractive growth still presents LDCs with abundant opportunities to forego climate-affecting industrialisation practices in favour of clean and efficient technologies. Already, 42% of LDCs had expressed the need for energy efficient technologies. 47% of waste in Africa and South Asia was not recycled and there is a need for the decentralisation in water supply. While there is need for trade-offs in the various sectors and within countries at global level, countries were not obligated to follow the same mitigation pathways. Each needed to adopt that which was best suited for its need.

Climate change is a global issue. Economic growth and population increase are set to exert stress on extraction and consumption of coal, gas and oil.

Dr. Shuaib Lwasa highlighted that the anticipated growth in the urban population of Uganda would require additional urban infrastructure, which would need mitigation and adaptation mechanisms. There are

opportunities that include the avoidance of emissions associated with infrastructure-related developments, by greening urban systems. He observed that future urban trajectories indicated that cities would most likely grow as extraction and consumption patterns changed; reducing GHG emissions from cities and making them sustainable is key to a national, regional and global cumulative reduction of emissions. He also observed that although Uganda was not obliged to mitigate, it is a responsible path towards sustainable development.





IPCC AR5 Authors: Dr. Shuaib Lwasa (left) and Dr. Youba Sokona (right)

IPCC AR5 Authors: Dr. Joyashree Roy (left) and Dr. Balgis Osman-Elasha (right)

#### Session Five: How do we pay for climate action?

- Mr. Philip Gwage, Former Coordinator of Uganda's Climate Change Unit
- Dr. Balgis Osman-Elasha, IPCC Working Group II

Mr. Philip Gwage led the discussion on climate change finance. He highlighted the need to distinguish between climate financing (which supports national institutions to undertake activities) versus climate change financing (the funds that should be made available to LDCs to tackle mitigation and adaptation challenges). He noted a history of lack of commitments for climate change financing to developing countries. The discussions centred on absence of mitigation obligations for LDCs, and so the question remained of under what conditions do they mitigate? It was emphasised that though all countries had contributed to climate change in different ways, developed countries were majorly responsible for climate change and should therefore take leadership and responsibility in climate action. It was observed that climate change financing should create necessary awareness for institutions and people to take appropriate action, and also provide incentives for the development of adaptation technology.

Dr Balgis Osman-Elasha indicated the inadequacy of financial resources, with more funding available for mitigation than adaptation. She observed that funding can either be bilateral or multilateral. Funding needs to come from all sectors and governments need to allocate funds for capacity building and institutional development.

### **Day Two - 22 August 2014**

#### **Session Six: Policy and Practice Forum**

The Policy and Practice Forum involved presentations that shared experiences on climate change policy, initiatives and practices from key players.

Ms. Kagoda Jacqueline from the Department of Disaster Preparedness and Management, Office of the Prime Minister, made a presentation on national disaster management initiatives in Uganda. She indicated that a Parliamentary Forum on Disaster Risk Reduction (DRR) exists, aimed at involving lawmakers in the implementation of DRR policy. Uganda has developed early warning systems, especially for floods, together with the Uganda National Meteorological Authority (UNMA) and Uganda Communications Commission (UCC). The challenges of DRR include limited mainstreaming of DRR into sector plans, inadequate understanding of approach to disasters, inadequate early warning systems, inadequate resources and lack of contingency funds.

Mr. Stephen Muwaya and Ms. Anuciata Hakuza from the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), gave a presentation on a National Agriculture Resilience Initiative. They highlighted that climate extremes (droughts and floods) lead to crop failure, increasing hunger and famine. MAAIF has a development strategy and investment plan to promote sustainable land use management for increased resilience and maintenance of long-term productivity and ecosystem function. There is an Inter-ministerial cooperation framework, implemented by five Ministries of Agriculture, Tourism, Energy, Lands and Housing and MWE to coordinate Sustainable Land Use and Management (SLM) activities. A number of climate smart agricultural initiatives are being implemented in partnership with USAID, UNDP, COMESA, FAO, World Bank, DFID, and the private sector. The focus is on improving agricultural productivity, food security and resilience of agricultural systems.

Dr. Everline Komutunga, an agro-meteorologist from the National Agricultural Research Organisation (NARO), made a presentation on climate change research initiatives. She observed that NARO collaborates with international research centres and farmers. In Uganda, research on agricultural systems is resulting in the development of drought and heat tolerant crop varieties. The Laboratories Research Institute develops agricultural labour saving machines, postharvest handling machines, assorted water delivery and harvesting technologies, energy efficient systems such as fireless cookers and wind energy. Postharvest research is also on going for managing postharvest pests and diseases. There is the promotion of sustainable land and water use management through the restoration of degraded land and watershed management technologies, and soil information systems. They also carry out data management, crop yield monitoring and projections, crop suitability mapping, information packaging and dissemination through producing cropping calendars for farmers.

Mr. Chebet Maikut from the Department of Climate Change, MWE, made a presentation on the National/Regional Policy Framework. He highlighted that Uganda has developed policies and plans to guide climate change response. For example, climate change is integrated in development plans - the Second National Development Plan (NDP II) and the Uganda Vision 2040. The East African Community (EAC), where Uganda is a member state, has developed a regional policy, the EAC Climate Change Policy. Uganda has developed a NCCP, whose goal is to ensure a harmonised and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda. An overall Performance Measurement Framework (PMF) is being developed to ensure the overall coordination of implementation and reporting to GoU.

Ms. Margaret Barihaihi of ACCRA made a presentation on a major NGO Programme in Uganda. She observed that CACCRA focuses on research on the resilience of African communities in order to provide evidence used to engage relevant institutions to carry out their mandate. She indicated that ACCRA, which is partly supported by CDKN, recommends that national and district governments adopt flexible and forward-looking decision making.

Ms. Sarah Kibenge, from the Private Sector Foundation – Uganda (PFSU), made a presentation on the key Private Sector Initiative. She indicated that climate change affects the private sector through reduced production and diminished labour productivity. She observed that the private sector in Uganda is concerned about climate change because it has realised the effects and is very keen on adopting green technologies. The sector is interested in working with all key stakeholders including policy makers to ensure appropriate dissemination and implementation of the NCCP.

Dr. Lynne Carter and Dr. David Mfitumukiza made a presentation on the activities of the Makerere University Centre for Climate Change Research and Innovations (MUCCRI). MUCCRI is a hub of academic, professional development and research excellence in climate science, climate adaptation and other related disciplines in Uganda. MUCCRI focuses on four thematic areas: climate science, mitigation and adaptation, policy, training and outreach.

#### **Session Seven: Parallel Sessions and Group Discussions**

Parallel sessions were conducted that involved group discussions on the implications of the IPCC AR5 for existing approaches to policy and practice in Uganda. Four sectoral groups were formed, including agriculture, water, energy and infrastructure. Key recommendations were made for each of the sectors as indicated below:

- For the agriculture sector, the priorities are to: finalise the national agricultural change action plan and integrate it in the sector's Development Strategy and Investment plan (DSIP) and NDP II; strengthen research collaboration and linkages with the private sector, extension workers and farmers; increase farmers' adaptation to climate change impacts through timely information on weather changes and early warning systems.
- For the water sector, priorities are: water resource planning at water catchment implementation level; water harvesting technologies; restoration of fragile ecosystems in catchment areas; promotion of global climate change alliances; increased access international climate change financing mechanisms.
- In the **energy sector**, there is a need to invest in improved biomass energy technologies for households, institutions and industry; refine current charcoal production technologies and practices; invest in renewable energy technologies and infrastructure (solar, wind, hydro and geo-thermal).
- For the **infrastructure sector**: the climate resilient road infrastructure was emphasised for mass transit transport systems and non-motorised transport systems; integrate climate change in building designs and standards; promote green infrastructure through energy efficiency, water efficiency, waste water management, ventilation.

#### **Closing Ceremony**

Dr. Youba Sokona observed that the IPCC has had some difficulty in mobilising African scientists to be part of the process, not only as authors but also providing comments on the ARs. He further indicated it was important for Makerere University lecturers and students to take note of the AR5 and disseminate its findings, with the aim of discussing it within the Ugandan perspective and coming up with applicable recommendations. He informed the participants that the next IPCC cycle would deal with all the issues that had been assessed in the AR5. He concluded by saying that as IPCC AR5 authors, they had learnt a lot during the outreach event and hoped that they too had been able to bring to the consciousness of participants some key issues on climate change.

Ms. Simbisai Zhanje noted that the IPCC AR5 outreach events had carried out in three African countries so far (Ethiopia, Kenya and Uganda) and indicated that the outreach process had been an interesting journey. She thanked MWE and Makerere University for having co-hosted the outreach event in Kampala. She also thanked all the participants for having come to hear about the IPCC, its work and what needs to be done with regard to climate change mitigation and adaptation. She noted that the need for collaboration and dissemination on climate change action have emerged as the two key issues from the Uganda outreach event. She concluded by thanking the IPCC authors for coming to Kampala to share the IPCC AR5 findings.

Dr. Revocatus Twinomuhangi, on behalf of Makerere University, thanked all participants for having honoured the invitation to participate in the outreach event. He noted that quite often a lot research is often undertaken but the research findings are not disseminated to policy makers, decision makers and the wider public. He indicated hope that that the lessons learned on climate change action from the IPCC AR5 would be taken up by all participants and stakeholders. He also thanked MWE for having accepted to work with Makerere University and CDKN in this endeavour. He hoped that the climate change partnership would yield greater results in the future.

Mr. David Mafabi, the Director of Environment, MWE, closed the event by thanking the IPCC Uganda Focal Point and UNFCCC Uganda Focal Point, representatives from Makerere University, CDKN and the IPCC authors for a job well done in organising the IPCC AR5 outreach event on the climate change arena at large. He observed that issues relating to climate change were taking centre stage in Uganda's development agenda because of the challenges it posed. He appreciated that Uganda was part of the IPCC AR5 outreach events in Africa and appreciated the open nature of the IPCC outreach events, which provided an opportunity for participation by all stakeholders. He emphasised that Uganda remained committed to solving the challenges brought about by climate change so as to ensure climate change resilience. The resounding message was that despite Uganda's minimal contribution to the current trend of global effects, there is need for collective responsibility since climate change is a global commons issue, which cannot be solved singularly.



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