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CLIMATE CHANGE AND DEVELOPMENT

CONSULTATION ON KEY RESEARCHABLE ISSUES

ANNEX V
LEAD SURVEY COMMENTS ON QUESTION 5
TREVOR REES

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We gave the respondents the opportunity to talk about specific projects or strategies that they think are research priorities. Below are the answers they gave by research field.

5.1 Climate modeling and scenarios.

We need scenarios at several scales, mostly now they are for large-scale studies; we need smaller scales, especially close to main coastal villages and cities - **Ileana Espejel, North Mexico/natural resources, Mexico**

We already know from current experience what some of the challenges are that we face - more dots on a graph won't help us adapt. Based on recent climate trends and extreme events, we can work take a risk-based approach to developing adaptation policy and options. - **Elizabeth Atkinson, Climate Change Impacts and Adaptation Policy, Canada**

To make the world population really aware about climate change implications. (Communication to make people trust in the research results) - **Jos, Manoel Pereira de Siqueira, Energy, Brazil**

To assess the likely of each scenario and likely impacts - **RUZIGANDEKWE Fidele, Wildlife Conservation, Rwanda**

This is a vital area to pin point the inevitable impacts due to the climate change. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

This has been done at a global scale. Perhaps more localized and more detailed models would be useful, yet I feel that enhancing the capacity of people in developing countries to adapt to change is the highest priority. - **Bruce Currie-Alder, international development research, Canada**

There is urgent need to understand the linkages between climate change ad its impact on poverty in western district of Central Province (Madhya Pradesh) which is susceptible to desertification. - **Lokendra Thakkar, Poverty and livelihood , India**

The basic of the research. - **FAN Hong, Asia, China**

Support of projects related to modeling the effects of climate change over the populations (human and biological), specially in the most vulnerable areas. Development of projects to identify the most vulnerable areas - **Patricia Arceo, Socioeconomics of Environment and Natural Resources, Mexico**

Scenarios need to include more than just climate within biophysical factors, and also socioeconomic factors. - **John Ingram, food security/environmental change, UK**

Research into model constructs to predict effect of climate change in different regions. - **Adekunbi Kehinde Omideyi, Developing Countries, Nigeria**

Regional models as a complement of global ones. Sectoral models - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Projects that help in giving early warning signs and increase awareness. Projects aimed at containing and mitigating impacts - **Dorcas Kayo, Energy, Zimbabwe**

Poverty, Energy Sources and Climate Change - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Of particular importance to us here (southern fringes of the Sahara) is modelling on the likely impact on water balance: positive or negative. Also the likely impact on the existing vicious cycle of poverty and environmental degradation. - **Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria**

- Water availabilities in river fed areas
 - Water stress and drought scenarios in arid areas
- R.Seenivasan, Water, Microfinance, Agriculture and Rural Development, India**

Scenarios on the impact of climate change on natural environment or specific sectors in a country - **NISSACK Céline Angèle, Economy, Côte d'Ivoire**

New laws and rules - **Eka Budianta, Business, Indonesia**

Modeling the impacts of climate change on soil organic matter in order to preview food security - **Yao Kouadio Michel, Soil Ecology/Carbon storage and fluxes, Cote d'Ivoire**

Modeling should also include various scenario planning for corporate activity in high-latitude regions which will also contribute to climate change, particularly in the oil and gas industry. - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Impacts of varying extreme climate and temperatures to the ecosystem and adaptability of the ecosystem to the changes. - **Gerald Okereke, Environment/Information Technology, Nigeria**

Impact on food shortages as a result of climate change on the African continent - **Theresa Subban, urban and environmental management, South Africa**

Forecasting change in areas most sensitive to climate change: e.g. island nations, arctic communities. - **Brian Smith, Local Government, Canada**

Forecasting and creation of scenarios as case studies - **NANCY MWIHAKI GITHAIGA, Operational Hydrology-Water engineering, KENYA**

Developing new methods of research - **Redouane BOULGUID, Development, Morocco**

Development of warning systems for climate using flooding indices. These will look at the levels of weather indices like rainfall, wind, temperature to assess the damage it may likely cause. - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Data clips with time line - **Okelo Madukaife, WEST AFRICA, Nigeria**

Assesment of the factors which poise to change the climatic conditions should be of top priority. - **T Theja, Mechanical Engineering, India**

Aggressive national policy that encourages bottom-top approach to climate change issues with regards to desertification. This should have inclusion in school curriculum and communal involvement. The tool of radio and television could be employed to disseminate the information via popular programmes. - **Sylvester Tunde Atere, Housing and Environment, Britain**

Africa is one of the regions in the world where climate data is very poor. Few model and scenarios has been developed for Africa. At the same time it's recognised that this continent is and will be in the future the most affected continent in the world by climate change. Therefore it's crucial that the climate network is developed in order to increase the insufficient available data that we have now. This could be achieved by densifying the climate network within every country and at the sub regional level. Models which are focused on Africa must be also developed. - **Moussa Ahmed Hassan, Environment specialist, Rp. de Djibouti**

Accurate prediction of what happens when different kinds/levels of climate change occurs. - **Susi Sarumpaet, environmental accounting, Australia**

A project that can predict the relation between natural disasters and climate scenarios - **Antonio Rico Lomeli, Municipal Government, Mexico**

A good example of this research was covered in a movie called 'The Big Chill' which was sponsored by BBC. Leverage existing research and organizations to carry out this work. - **Randy Sadewic, Renewable Energy, USA**

- How to change scenarios for future by changing the present conditions.
- Models that include socio-economic and cultural variables to construct scenarios. Scenarios construction changing the 'base-line', that is, what are the present conditions that we must change for better mitigate the predictable impacts of climatic change (beyond emissions reduction) i.e. specific ecological restoration, change of hydraulic infrastructure, change in construction materials.

Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico

Rangelands projects - **Musarrat Jabeen, Education, Pakistan**

(It is very important, but currently it's the most developed research area, and it's urgent to raise other ones). - **M. Isabel Ramirez, Tropical temperate forests / Fisical geography, Mexico**

5.2 Impacts of climate change on the natural environment.

Water is a crucial issue all over the world in general but particularly in Africa. - **Moussa Ahmed Hassan, Environment specialist, Rp. de Djibouti**

Vegetation and desertification in Pakistan which has the highest of the 2nd largest mountain at a time with sea level - **Ali Ahmad Jan, Monitoring and Evaluation , Pakistan**

To convince the masses there is strong case to prove the real effect /impact due to climate change in short term as well as long-term scenario. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

To assess the vulnerability of different ecosystems (if possible go down to the level of habitat and species as well as the functions / ecological processes...) - **RUZIGANDEKWE Fidele, Wildlife Conservation, Rwanda**

This should focus on identifying high priority areas, areas that will be affected to the greatest degree so that resources can be mobilized accordingly. - **Sophia Klemptner, Central America / public health/health education, Costa Rica**

Sustainable urban management - **Teresa Tattersfield, sustainable development projects, Mexico**

Strategies to reduce heat - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

Sample trials - **Okelo Madukaife, WEST AFRICA, Nigeria**

Role of communities for managing their Natural Resources - **Dr. Pushkin Phartiyal, Rural Livelihood/participatory approaches, India**

Research on specific impacts according to the forest type, and regional geography. Research on regional and local water resources. Research on growing rates of vegetation, and forests. - **Patricia Gerez-Fernandez, Forest ecology and management, Mexico**

Research on impact of climate change on landscape, coastline modifications etc. - **Adekunbi Kehinde Omideyi, Developing Countries, Nigeria**

Quantitative and social research on its impact on the different ecological zones. The potential extent of possible damage. Impact on ecological stability. Impact on the Niger delta region ecosystem is a must do - **Odele Muiyiwa, Sub Saharan Africa/ Biodiversity and natural resources management, Nigeria**

Protected areas, wildlife, water dynamics - **Glen Hvenegaard, North America, Canada**

Preservation of biodiversity. Partnerships with United Nations agencies. Implementation of Agenda 21 locally - **Redouane BOULGUID, Development, Morocco**

Peoples reaction to climate change might be more important than natural environment alone, although both issues are intimately related - **Ileana Espejel, north mexico/natural resources, Mexico**

People in our economies still strongly linked to the natural environment for survival. Environmental management projects - **Dorcus Kayo, Energy, Zimbabwe**

Particularly identifying these impacts based on eco-regions and long-term resilience measures. - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

On the basis of climate change research. - **FAN Hong, Aisa, China**

- Changing levels of sea waters in coastal areas
- Declining agricultural yields in dry arid areas

R. Seenivasan, Water, Microfinance, Agriculture and Rural Development, India

Bird Migration as an indicator of climate change - **Mireille Atallah-Augé, Integrated land use planning – natural resources management, Lebanon**

Natural environment must be continually monitored. Because not only our species will get affected, we have to save other life forms too. - **T Theja, Mechanical Engineering, India**

Monitoring changes in water resources and woody vegetation - **Rachel Berger, agriculture and NRM, UK**

Lowland territories. Trade offs between agricultural and preserved areas (not suitable for agric) - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Is it possible to maintain bio diversity even in case of climatic change? - **WAFO David, f teaching foreign Languages/ African literature, Cameroon**

Intensive agriculture promotion. Carbon sequestration. - **KLUTSE RAOUL AMATEVI, Africa, Agric development, Natural resources management, Togo**

Impacts research on the physical environment has been plentiful, more will not necessarily prove helpful for the choices that need to be taken now. - **Elizabeth Atkinson, Climate Change Impacts and Adaptation Policy, Canada**

Impacts on water availability/quality/flood - **Dr Andrew Dlugolecki, insurance and finance/europe, Scotland**

Impacts of climatic changes and adaptability of earthworms to climatic changes. - **Gerald Okereke, Environment/Information Technology, Nigeria**

Impacts of climate change in Flora and fauna - **Dr. Damian Ihedioha, Climate Change/Natural Resources Management, Nigeria**

Impact on water resources. - **Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria**

Impact on agriculture, water availability and the consequent impact on livelihoods and economic well-being. - **Bruce Currie-Alder, international development research, Canada**

Impact of Climate Change on Coastal Mangrove Resources. Impact of Climate Change on Coastal erosion - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Forest and human behaviours - **Patrice NZALAKANDA, Communautary development, Republic of Congo**

Focus part research on the African continent, where much human life is directly dependant on the natural environment for their livelihoods and sustenance. - **Theresa Subban, urban and environmental management, South Africa**

Educational projects to sensitise populations on possible dangers. Developing alarm-system to prevent upcoming dangers (like Tsunamis...) - **Bokoum Djibril, Education, Germany**

Education through media - **Eka Budianta, Business, Indonesia**

Drying of wetlands, sea water intrusion, habitat degradation, wildlife migration - **Hammad Naqi, Environment/ water resources management, Pakistan**

Development of forestry projects in vulnerable areas to check disasters like flooding, erosion that may arise from climate change. - **Olayiwole Onasanya, Sub-Saharan Africa /Agronomist, Nigeria.**

Climate changes impacts are a result of source effects, which are more important to assess to have good idea on the probe and to define the measures - **OUERTANI ABDERRAZAK, Environment, Agriculture, sustainable development, Tunisia**

Climate change in the Tibetan Plateau, which shows early changes before other part of the world. - **Qiao Liming, energy and climate change, China**

Assess the impacts of climate change on soil organic matter in order to mitigate food security- **Yao Kouadio Michel, Soil Ecology/Carbon storage and fluxes, Cote d'Ivoire**

Alert people about these issues. Modelling attitudes to the nature. Feedback - **Carlos Almenara V., Health, Peru**

A strategy that considers the Natural protected areas management related to climate change consequences in non-development countries - **Antonio Rico Lomeli, Municipal Government, Mexico**

Study Effects on forests-fires, death of lianas etc 2. For Kenya and other developing nations-energy needs. Hydro Electric Power, wood fuel charcoal etc 3. Water needs, groundwater and surface water-demand and supply scenarios - **NANCY MWIHAKI GITHAIGA, Operational Hydrology-Water engineering, KENYA**

Water management - **Musarrat Jabeen, Education, Pakistan**

Based on the experience of impacts of the present climatic variability (or occurrence of extreme events) on different ecosystems, research on management, protection and restoration alternatives to vulnerable areas. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

5.3 Impacts of climate change on specific sectors (e.g. agriculture, public health).

Yes, the past experiences in the recent past only in different part of the globe has really started sending strong signals that there is beginning of climate change and their detail impacts are required to be undertaken. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

Urbanisation: More and more Africa populations are now concentrating in urban areas on coastal zones. Infrastructure is still created without taking into account the impacts of climate change. Urbanisation is continuing along the seaside. The research on climate change must integrate the issue of big cities where more and more populations and economic activities are concentrating every day. This issue deal with land management and land planning. - **Moussa Ahmed Hassan, Environment specialist, R.p. de Djibouti**

This should focus on identifying high priority areas, areas that will be affected to the greatest degree so that resources can be mobilized accordingly. - **Sophia Klemptner, Central America / public health/health education, Costa Rica**

Study of soil conditions and rehabilitation of poor areas so that agricultural sustainable livelihoods activities can be protected - **Theresa Subban, urban and environmental management, South Africa**

Sorts of agricultures- **Patrice NZALAKANDA, Communautary development, Republic of Congo**

Research through questionnaires - **Okelo Madukaife, WEST AFRICA, Nigeria**

Research on specific impacts according local-regional aspects related to agriculture and cattle raising. - **Patricia Gerez-Fernandez, Forest ecology and management, Mexico**

Research into the impact of global warming on; a) soil composition for future agricultural production, b) air pollution and the health of people in different climatic zones - **Adekunbi Kehinde Omidoyi, Developing Countries, Nigeria Public out reach - Eka Budianta, Business, Indonesia**

Public health projects - **Musarrat Jabeen, Education, Pakistan**

Public health issue related to water resources changes due to climate change. - **Qiao Liming, energy and climate change, China**

Projects to increase food production - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

Projects for example, the health problems in Europe related with the temperature increase during the 2003 summer, to predict or/and prevent consequences in human health - **Antonio Rico Lomeli, Municipal Government, Mexico**

Pre-assessment could reduce the damage of the catastrophe. - **T Theja, Mechanical Engineering, India**

Oil and gas sector - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Participatory research and analytical documentation on how critical traditional societies are coping with climate change, vis-à-vis, the traditional agricultural systems. - **Amba Jamir, Eastern Indian Himalayas/ Community development and training, India**

Impacts on agricultural productivity - **Mireille Atallah-Augé, Integrated land use planning – natural resources management, Lebanon**

- Impact of the climate change on the agricultural production and breeding in each country: harmful effects and beneficial effects
- Identify the diseases most suitable to affect the human beings

NISSACK Céline Angèle, Economy, Côte d'Ivoire

- Agriculture
- Drinking and agricultural water supplies

R.Seenivasan, Water, Micro-finance, Agriculture and Rural Development, India

Making the connection between sectors would be useful, in a similar fashion to the recent UN Millennium Project reports. - **Bruce Currie-Alder, international development research, Canada**

Investment in infrastructure and clean technologies, capacity building and environmental education. - **Teresa Tattersfield, sustainable development projects, Mexico**

Intensive agriculture promotion within the world. Funding alternative agriculture production such as legume production, periurban agriculture, etc. - **KLUTSE RAOUL AMATEVI, Africa, Agric development, Natural resources management, Togo**

Increase research to know more about climate change on public health, on fauna and flora. Reviewing Environmental laws, which protect industries and polluting agents. - **Bokoum Djibril, Education, Germany**

Impact on current pattern of food production - **Rachel Berger, agriculture and NRM, UK**

Impact on agriculture as related to the likely increase and/or decrease on irrigation water requirements. - **Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria**

How to maintain a food security for those who do not yet have a food sufficiency? - **WAF0 David, f teaching foreign Languages/ African literature, Cameroon**

How it will impact on productivity/ yields/ available land for agriculture. Impact of rural farmers livelihoods. Impacts of food security. Impact on African heads of state resolution on agriculture. Effect on quality of potential exports with SPS and WTO rules to consider - **Odele Muyiwa, Sub Saharan Africa/ Biodiversity and natural resources management, Nigeria**

Food sufficiency is a key issue. How to produce or adapt to environmental changes so that there is minimal disruption to food production. **Adaptive strategies - Dorcas Kayo, Energy, Zimbabwe**

Food security - **Esther Towo, Tanzania**

Financing for development, Capacity Building - **Redouane BOULGUID, Development, Morocco**

Environmental change and health impact - **Zhou Haicheng, Health education and health promotion, China**

Development of small-scale irrigation schemes in Agriculture as a result of Global warming that may arise and limit agriculture. Waste recycling projects that will limit the release of carbon dioxide and methane to the atmosphere. - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Development of research (experimental) on food and agriculture production alternatives in the face of the present climatic variability and environmental deterioration (i.e. erosion of soils). In the same way, research on vector's behaviour and natural defences that can be enforced - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Crop water requirement, shift from mono cropping, provision of potable water, link with water borne diseases, etc - **Hammad Naqi, Environment/ water resources management, Pakistan**

Climate changes impacts are a result of source effects, which are more important to assess to have good idea on the probe and to define the measures - **OVERTANI ABDERRAZAK, Environment, Agriculture, sustainable development, Tunisia**

Climate Change, Subsistence Agriculture and Food Security in Poor Communities. Impact of Climate Change on Natural Food Storage Practices in Poor Rural Communities - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Climate Change and Food Security, Climate change and water resources, Climate change and disease causing vectors, and adaptation to the issues raised. - **Dr. Damian Ihedioha, Climate Change/Natural Resources Management, Nigeria**

Assess the impacts of climate change on land use changes in order to mitigate food security - **Yao Kouadio Michel, Soil Ecology/Carbon storage and fluxes, Cote d'Ivoire**

Already mentioned on Q 5.1 - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Agriculture is important, but food security is the real issue, which depends on more than agriculture. - **John Ingram, food security/environmental change, UK**

Agriculture - **Sylvester Tunde Atere, Housing and Environment, Britain**

1. More climate changes resistant crops 2. EARLY RELAY OF INFORMATION TO FARMERS NOT THRO TVs OR RADIO BUT THRO EXTENSION OFFICERS ON THE GROUND 3. WITH LITTLE WATER NEED FOR BETTER METHODS OF TREATING THE SMALL AMOUNTS - **NANCY MWIHAKI GITHAIGA, Operational Hydrology-Water engineering, KENYA**

5.4 Impacts of climate change on specific socio-economic groups (e.g. women, youth).

Women life - **Gentile Chasaya, Water and Sanitation Services, Zambia**

Women and youths should be involved in combating desertification while experts from global bodies like FAO, UNDP, World Bank etc should be the facilitators in conjunction with the Federal Government of Nigeria - **Zhou Haicheng, Health education and health promotion, China**

Women and youths constitute active farming population, should be supported to develop advance strategies for revenue generating projects - **Sylvester Tunde Atere, Housing and Environment, Britain**

Women and children vulnerable to climate change because of lack of resources. Programmes that empower women and youth to adapt to climate changes quickly - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

Wide-ranging socio-economic analysis is key to making informed decisions as to who has to adapt to what and how that might best be accomplished. Doubt that research on a particular 'group' would be helpful but certainly regional studies are critical. - **Dorcas Kayo, Energy, Zimbabwe**

This will be important if the studies will focus on access to water and capacity for income generation for women (as related to small scale agro processing and marketing as well as alternative livelihoods). - **Elizabeth Atkinson, Climate Change Impacts and Adaptation Policy, Canada**

This should focus on identifying high priority areas, populations that will be affected to the greatest degree so that resources can be mobilized accordingly. - **Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria**

The situation of women in many countries is still very bad. In rural areas they are doing a lot of work to find water and wood for cooking. The specific impacts of climate change on the women should be more studied. As women another group, the nomadic people, are affected by the impacts of climate change. Research must be also be undertake to assess their situation. - **Sophia Klempler, Central America / public health/health education, Costa Rica**

Sources of risks for the different socio-economic groups. Direct and indirect links with the environmental impacts of climatic change. - **Kossi AHIKONU**

Small Scale agriculture. Micro-economic income generating Activities. Microfinance - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Response to Climate Change and the Family. Implications of Climate Change Policies and Programmes for Women and Children - **Redouane BOULGUID, Development, Morocco**

Research through questionnaires - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Research into the effect of the Tsunami (a resultant effect of climate change) on the living conditions of women, youths, displaced populations etc. Any effect of climate change on women's work, educational opportunities. Any effect on the elderly? - **Okelo Madukaife, WEST AFRICA, Nigeria**

Public awareness programmes for the socio-economic groups. - **Adekunbi Kehinde Omideyi, Developing Countries, Nigeria**

Promoting self-employment - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Projects that can measure the impact in risk groups (women, youth) related to climate change who provokes natural disasters - **KLUTSE RAOUL AMATEVI, Africa, Agric development, Natural resources management, Togo**

- Farmers in Arid and semi arid areas
- Women in Farms and homes

Antonio Rico Lomeli, Municipal Government, Mexico

Climate change and vulnerable social groups (elderly, pregnant women, and toddlers) - **R.Seenivasan, Water, Microfinance, Agriculture and Rural Development, India**

Multi media campaign - **NISSACK Céline Angèle, Economy, Côte d'Ivoire**

Involving women and youth on effects of climate change (sensitisation) - **Eka Budianta, Business, Indonesia**

Include this in more effective decision support (see 5.7) - **Esther Towo, Tanzania**

Impacts on small-scale farmers and fishermen - **John Ingram, food security/environmental change, UK**

I think it could be included in the 5.3 - **Hammad Naqi, Environment/ water resources management, Pakistan**

I find it difficult to find significant differences within socio-economic groups. CG has an overall impact, mainly regional, and I am doubtful about its impact solely on socio-economic groups. The threshold is not so much socio-economic as it is regional - **Florencia Hastings, environmental law, Uruguay**

How do we solve the problem of vulnerability? - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Especially in developing countries and in coastal areas. - **WAF0 David, f teaching foreign Languages/ African literature, Cameroon**

Effects on elderly - **Bruce Currie-Alder, international development research, Canada**

Education, information and sustainable development projects - **Dr Andrew Dlugolecki, insurance and finance/Europe, Scotland**

Demonstrate the relationship between tit and gender/ highlight gender considerations. How it would mean more urban migration of youths from rural areas for more jobs due to dwindling resources. Using them to champion the course and creation of awareness - **Teresa Tattersfield, sustainable development projects, Mexico**

Consumers. Indigenous peoples. Women. Children - **Odele Muyiwa, Sub saharan africa/ Biodiversity and natural resources management, Nigeria**

Conflict management projects - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Climate changes impacts are a result of source effects witch are more important to assess to have good idea on the problem and to define the measures - **Musarrat Jabeen, Education, Pakistan**

Climate change and its implication on women and children who would need to travel long distances in search of water for domestic use. The physically challenged people and climate change. - **OUERTANI ABDERRAZAK, Environment, Agriculture, sustainable development, Tunisia**

Can focus on the futuristic possibilities if the impacts of climate change regarding women and youth are not adequately researched - **Dr. Damian Ihedioha, Climate Change/Natural Resources Management, Nigeria**

Because the exposure of the target group is very important in such studies. If take the case of the developing countries the w omen are more exposed for fuel collection, garbage collection from municipal dumping site along with even small kids in their laps, etc hence I am of the opinion such studies are going to be of immense help in educating the people. - **Theresa Subban, urban and environmental management, South Africa**

Strategic and practical gender needs to be tackled. Women and children walking longer distances in search of water and food. Due to poor health a bigger burden on women as they take care of the young. Need therefore to have specific strategy - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

Migration in response to climate change impacts, among different demographic, social, economic and cultural groups. 2. Households coping strategies to climate change impacts. - **NANCY MWIHAKE GITHAIGA, Operational Hydrology-Water engineering, KENYA**

5.5 Raising stakeholder awareness of climate change.

Water is a vital need that everyone uses, included stakeholders. Maybe appoint to the [non-totally pure] water they use... - **Carlos Almenara V., Health, Peru**

Using radio broadcasting techniques - **Claudio Alatorre-Frenk, energy, Mexico**

Train the extension officers. Improve early warning communications. Offer better alternatives to the affected - **NANCY MWIHAKI GITHAIGA, Operational Hydrology-Water engineering, KENYA**

To prepare very specific educative, audiovisual aids using the indigenous resources and requirements. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

This is key to developing effective adaptation and mitigation strategies. Research in how to improve communications of science outputs v. important. - **John Ingram, food security/environmental change, UK**

There is a need to reach the media sector in order to convince them that this theme is real and deserves attention, and that they have a responsibility towards their local-regional societies to inform them. This theme is being managed mainly by specialist groups and scientists. - **Patricia Gerez-Fernandez, Forest ecology and management, Mexico**

Strategies: Improvement and enhancement of environmental education, extensive sharing of knowledge about production alternatives, local and regional actions implementation for sustainable development. Development of a 'climatic culture' in local and global society. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Sensitising campaigns in rural areas, educational environmental projects. - **Bokoum Djibril, Education, Germany**

Sensitising campaigns. Individual & collective responsibility - **RUZIGANDEKWE Fidele, Wildlife Conservation, Rwanda**

Sensitisation campaigns - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

Research that identifies what motivates different business sectors and population sectors to act to curb global warming so that effective incentive and education programs can be put in place. - **Sophia Klempner, Central America / public health/health education, Costa Rica**

Projects about P2 (Pollution prevention) in development and non-development countries Social responsibilities projects - **Antonio Rico Lomeli, Municipal Government, Mexico**

Programme with educative focus and also on communication - **Theresa Subban, urban and environmental management, South Africa**

Private stakeholders have already incorporated CG strategies (Look at the Emissions Trade market, for instance). Therefore, it is important to strengthen these initiatives. I believe more efforts should be made for public policies at national level - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Pressure from society and train the government in order to generate public policy - **Teresa Tattersfield, sustainable development projects, Mexico**

Politicians and civil servants need to be aware, and the latter to be 'climate-proofing' projects and investment plans - **Rachel Berger, agriculture and NRM, UK**

Please see comments on Q1. – **Jos Manoel Pereira de Siqueira, Energy, Brazil**

Organising seminars / conferences. Linking it with current countries desire to grow and develop economically. Involving school children via curricular and other creative learning processes. Localising the phenomenon. Commissioning newspaper write ups and television documentaries and debates and discussions - **Odele Muiyiwa, Sub Saharan Africa/ Biodiversity and natural resources management, Nigeria**

Raising awareness of decision makers - **Mireille Atallah-Augé, Integrated land use planning – natural resources management, Lebanon**

- Lobbying and plea to stakeholder about the climate change
- Raising stakeholder awareness on the impact of climate change
- Raising stakeholder awareness on the impact of their own the system of production on the on the climate change
- Raising stakeholder awareness on the economic impact

NISSACK Céline Angèle, Economy, Côte d'Ivoire

- Awareness in Hilly areas where preservation is to be stressed
- Awareness and Capacity building with farmers

R.Seenivasan, Water, Microfinance, Agriculture and Rural Development, India

Need to organise orientation-training programmes to sensitise decision makers. - **Lokendra Thakkar, Poverty and livelihood, India**

Need to move beyond awareness to actual capacity building of local groups to response to change and take action to mitigate likely risks. - **Bruce Currie-Alder, international development research, Canada**

Need for awareness raising at policy levels of governments, CBOs, Private sector and civil society - **Dr. Damian Ihedioha, Climate Change/Natural Resources Management, Nigeria**

Multinational stakeholders, especially oil companies, government at all tiers - federal states and local governments, community based organisations (CBO) should all be involved in finding a permanent solution to the challenges of Gas flaring in the Niger Delta. - **Sylvester Tunde Atere, Housing and Environment, Britain**

Much work has been done on raising awareness of the need to reduce greenhouse gas emissions but very little has been done to help make the connection between a changing climate and the need to adapt. This is a serious gap. - **Elizabeth Atkinson, Climate Change Impacts and Adaptation Policy, Canada**

Life and media awareness programmes - **Okelo Madukaife, WEST AFRICA, Nigeria**

It's very important to assess stakeholder's awareness of climate change. Sensibility is a good solution but it necessitates more volenties from governments - **OUERTANI ABDERRAZAK, Environment, Agriculture, sustainable development, Tunisia**

Irrigation management projects - **Musarrat Jabeen, Education, Pakistan**

Information campaigns and supporting projects aimed to spread information related to climate change effects to vulnerable groups - **Patricia Arceo, Socioeconomics of Environment and Natural Resources, Mexico**

Increasing American awareness of climate change impacts in developing countries through educational partnerships and exchange programs. - **Brian Smith, Local Government, Canada**

Illiteracy Programs First, Media Workshops - **Redouane BOULGUID, Development, Morocco**

How can we bring every body to awareness? - **WAFU David, f teaching foreign Languages/ African literature, Cameroon**

Hold strategic meetings (local and international) to discuss ways of raising awareness - **Adekunbi Kehinde Omideyi, Developing Countries, Nigeria**

Environmental education is highly needed, especially in developing countries - **Ileana Espejel, North Mexico/natural resources, Mexico**

Determination of the best medium for raising awareness of the impact of climatic change in different societies i.e. is it the television, radio, Internet etc. - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Concerted multi media campaign - **Eka Budianta, Business, Indonesia**

Climate change education can be adopted in Environmental education - **Ali Ahmad Jan, Monitoring and Evaluation, Pakistan**

Case studies with real data - **Hammad Naqi, Environment/ water resources management, Pakistan**

Capacity building on climate change - **Esther Towo, Tanzania**

Campaigns at defined stakeholder groups - consumer, business, policymaker, administrator transformation programmes in organisations - where all participants are taught to integrate climate change in their daily procedures and planning- by the introduction of a temporary, high-powered team, mainly internally staffed - **Dr Andrew Dlugolecki, insurance and finance/europe, Scotland**

Business execs, Business students - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Awareness campaigns. - **Asadullah Khan Sumbal, Indian Sub Continent / South Asia, Pakistan**

A lot of sensitisation and advocacy required. This should be necessary components of development projects in developing countries - **Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria**

Social and Spatial Pattern of Awareness of Climate Change Issues: Implications for Policy - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

5.6 Building capacities to adapt to the impacts of climate change.

Yes, needs to cover range of stakeholders and resource managers - **John Ingram, food security/environemtal change, UK**

What about building capacities to AVOID the impacts of CG? - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Urban management one of sources of effects on climate changes. But it's not a very important priority now. First, it's very important to define the most important sources of the international problem - **Ouertani Abderrazak, Environment, Agriculture, and sustainable development, Tunisia**

Transfer of Technologies - **Ruzigandekwe Fidele, Wildlife Conservation, Rwanda**

Training, seminars and workshops - **Okelo Madukaife, WEST AFRICA, Nigeria**

Training of Specialists in the field of climatic change and impacts on sectors of the economy; on quality of life; on migration patterns - **Adekunbi Kehinde Omideyi, Developing Countries, Nigeria**

Training of researchers for competence in this area. Involving national research institutes. Training members of the civil society. Training relevant governmental agencies. Partnering with international agencies to develop local capacity - **Odele Muyiwa, Sub saharan africa/ Biodiversity and natural resources management, Nigeria**

Training of relevant government staff - **Hammad Naqi, Environment/ water resources management, Pakistan**

Training - **Eka Budianta, Business, Indonesia**

This is THE issue in my opinion. - Bruce Currie-Alder, international development research, Canada

This is close linked to the anterior point, but this must include some strategic sectors: Research and development of alternatives in energy, industrial processes, infrastructure, food production, health care, etc. for different environmental conditions. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Support of multidisciplinary projects aimed to this purpose; especially those involving working along with potentially affected communities - **Patricia Arceo, Socioeconomics of Environment and Natural Resources, Mexico**

Strong and effective Partnerships to be established and supported among CBIs of the north and south. Of necessity there should be CB components on all development projects. All strata of society should have their capacities raised to ensure popular participation and acceptability of programmes and actions. In addition communities and civil societies should be empowered to demand openness, accountability and participation in decision-making. - **Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria**

See above - **Dorcas Kayo, Energy, Zimbabwe**

SD education strategies. Building capacities in non development countries - **Antonio Rico Lomeli, Municipal Government, Mexico**

Scholarship; Fellowship; Group training; competition for public awareness - **KLUTSE RAOUL AMATEVI, Africa, Agric development, Natural resources management, Togo**

Perception and Response to Critical Climate Change Challenges - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

- Vulnerability assessment (CB in third world countries)
- Risk management and contingency plans to respond to CC related disasters

Mireille Atallah-Augé, Integrated land use planning – natural resources management , Lebanon

- Coping strategies for drought hit areas
- Coping mechanisms of farmers

R.Seenivasan, Water, Microfinance, Agriculture and Rural Development, India

Capacity of adaptation of the human beings to the climate changes in various areas of the world and especially in the various areas of Africa - **NISSACK Céline Angèle, Economy, Côte d'Ivoire**

Need to be related to special sites, more risky areas- **Ileana Espejel, North Mexico/natural resources, Mexico**

More, more, more... - Elizabeth Atkinson, Climate Change Impacts and Adaptation Policy, Canada

Micro insurance linked to Microfinance to deal with climate variability. Resilient construction. Risk assessment integrated into land development process - **Dr Andrew Dlugolecki, insurance and finance/europe, Scotland**

Inventory and monitoring green house gases in the development countries - **Yao Kouadio Michel, Soil Ecology/Carbon storage and fluxes, Cote d'Ivoire**

Introduction of modern and water use efficient and effective irrigations practices - **Asadullah Khan Sumbal, Indian Sub Continent / South Asia, Pakistan**

Institutionalisation. Public/Private partnerships. Local good Governance - **Redouane BOULGUID, Development, Morocco**

Identify local groups with the greatest potential to work with local populations and effectively interface with governments and donor agencies to manage local education and other programs. - **Sophia Klempner, Central America / public health/health education, Costa Rica**

I prefer avoid the progress of climate change instead adapt me to it (is it a pro Cuvier, Lamarck, Lyell 's theory question? hehe =P) - **Carlos Almenara V., Health, Peru**

Government agencies, educational centres, professional and technical trained people are not including this issue into their usual planning strategies and future projects. - **Patricia Gerez-Fernandez, Forest ecology and management, Mexico**

Focus should be on helping communities prepare and adapt - **Rachel Berger, agriculture and NRM, UK**

Enhance MONITORING CENTRES INCLUDE VILLAGERS IN DISSEMINATION - **NANCY MWIHAKI GITHAIGA, Operational Hydrology-Water engineering, KENYA**

Development of training programmes for mid career public and private sector officials. - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Considering the availability of smart strategies, capacity building will complete the strategy. - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

Climate change awareness- **Musarrat Jabeen, Education, Pakistan**

Capacity building to prepare all stakeholders to face the challenge. This may be done by educating people to work aggressively especially young generation to use as for possible the environmental friendly path. For example in developing countries all sorts of organic waste either to be properly land filled and convert in value added products; electric power, compost etc. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

Capacity building in developing countries. – **Jos Manoel Pereira de Siqueira, Energy, Brazil**

Capacity building for professional and public- **Zhou Haicheng, Health education and health promotion, China**

Can we equip people with basic skills to adapt to climatic change? - **WAFO David, teaching foreign Languages/ African literature, Cameroon**

Business execs, Business students - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Building capacities of local farmers to adapt to climate change - **Dr. Damian Ihedioha, Climate Change/Natural Resources Management, Nigeria**

As stated above - **Sylvester Tunde Atere, Housing and Environment, Britain**

Appropriate capacity building projects and alternative options based on local resources and local conditions - **Theresa Subban, urban and environmental management, South Africa**

5.7 Governance and decision making processes to manage impacts of climate change.

What policy needed to manage climate change and how to implement them in regional, national and international level - **Susi Sarumpaet, environmental accounting, Australia**

Very critical. This should dominate global discourse at various levels. - Dr. Dogara Bashir, Northern Nigeria/ Water Resources, Nigeria

Understanding the grassroots situation requires projects that involve vulnerable groups in decision making Governance problems have to do with how available resources whether from government or NGOs are distributed to the right people who need the support and assistance - **Dorcias Kayo, Energy, Zimbabwe**

Training of the decision makers - **Maggie Mlengeya, Agriculture, Tanzania**

Training of governmental agencies, national assembly members, state lawmakers, local government officers. Instituting a bill in the house. Using it as opportunity to promote good governance and democratic culture in the country. - **Odele Muyiwa, Sub saharan africa/ Biodiversity and natural resources management, Nigeria**

Training for policy makers and implementers on climate change - **Dr. Damian Ihe dioha, Climate Change/Natural Resources Management, Nigeria**

To educate the bureaucrats, politicians and media for better deliverables to the society at large. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

To be really practical, this research should build upon capacities built in 5.6, in other words be bottom up rather than top down. - Bruce Currie-Alder, international development research, Canada

The rights of information and participation. Environmental human rights' promotion and protection - Redouane BOULGUID, Development, Morocco

Study of local, regional and global socio-economic power structures concerning vulnerable areas and the current way to take decisions in the face of i.e. natural disasters. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Strategies that permits building capacities between government decisors - **Antonio Rico Lomeli, Municipal Government, Mexico**

See transformation programme (5.5) and land development (5.6) - essential to require publication of risk assessment surveys, and to state achievements regularly under climate change programmes - **Dr Andrew Dlugolecki, insurance and finance/Europe, Scotland**

See 5.5 - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Same as 5.6 - **Okelo Madukaife, WEST AFRICA, Nigeria**

Related to 5.5 - **Ileana Espejel, North Mexico/natural resources, Mexico**

- Local management of Natural resources
 - Capacity Building of existing government and NGOs
- R.Seenivasan, Water, Microfinance, Agriculture and Rural Development, India**

Exercise of simulation of intervention in the event of disaster natural in different countries in Africa - **NISSACK Céline Angèle, Economy, Côte d'Ivoire**

New rules and laws - **Eka Budianta, Business, Indonesia**

Need to address political will by empowering decision maker's I.T.O. knowledge, awareness of impacts - tangible projects. - **Theresa Subban, urban and environmental management, South Africa**

More, more, more... especially risk-based approaches and other decision-making tools for the various sectors to assist with adaptation choices. - **Elizabeth Atkinson, Climate Change Impacts and Adaptation Policy, Canada**

It's now a priority and industrial countries must full their responsibility by ratification of convention of climate change and applied measures to reduce their impacts (emissions) - **OUERTANI ABDERRAZAK, Environment, Agriculture, and sustainable development, Tunisia**

Inter-Government Processes and Climate Change Management. Programme Coordination and Harmonisation in Decision Making Processes for Climate Change Management - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Including understanding the role of companies and their stakeholders within such decision-making - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

In my country (Peru) results totally necessary the creation of Government Conservation Policies and a true Law System that keep for them. People cut trees of intangible areas and they say do it for money! In this case are policies, but it is not totally possible to take care of them because of an inefficient system - **Carlos Almenara V., Health, Peru**

Improve awareness in public sector. - **Asadullah Khan Sumbal, Indian Sub Continent / South Asia, Pakistan**

Enhance accountability on a global level so that agreements such as the Kyoto Protocol are adhered to. - **Sophia Klempner, Central America / public health/health education, Costa Rica**

Empowerment of public sector environmental agencies on the implementation of Montreal and Kyoto protocol and other multilateral protocols. In developing countries most of these protocols are not understood. - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Decision making support systems- **Musarrat Jabeen, Education, Pakistan**

Can we start raising awareness among decision makers? - **WAFO David, f teaching foreign Languages/ African literature, Cameroon**

BETTER GOVERNANCE - **NANCY MWIHAKI GITHAIGA, Operational Hydrology-Water engineering, KENYA**

As suggested above - **Sylvester Tunde Atere, Housing and Environment, Britain**

As mention in Q5.6 - **Patricia Gerez-Fernandez, Forest ecology and management, Mexico**

Again, a key area. Improve decision support needed based on well-expressed information need and high quality research comms. - **John Ingram, food security/enviromental change, UK**

A lot of planning commitment on part of government to put all these strategies in place. - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

5.8 Monitoring, assessment and institutional capacity to manage impacts of climate change.

Use questionnaire, focussed interviews and surveys of existing procedures and capacities - **Odele Muyiwa, Sub Saharan africa/ Biodiversity and natural resources management, Nigeria**

To promote scientific and technical learning (training) for use it in the mid-growth countries - **Carlos Almenara V., Health, Peru**

This again follows from the former 5.7, since this is the mechanics of how the governance processes are implemented. - **Bruce Currie-Alder, international development research, Canada**

Since CG is a so-called 'commons' problem, what are the best institutions to deal with it? I don't think this question has been properly addressed as yet. - **Fernando Monteiro da Cunha, Latin America / Socio-economic development, Brazil**

Selecting Centres of Excellence on climate change and investing on training of new levels of scientists on climate change - **Dr. Damian Ihedioha, Climate Change/Natural Resources Management, Nigeria**

Research is needed to assess and improve the institutional capacity of companies to identify and manage the impacts of climate change. - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Research centres can be established on certain indicators to assess the pace of climate change in different regions - **Ali Ahmad Jan , Monitoring and Evaluation , Pakistan**

Research are very important to continue now to take real measures and to apply real assess - **OUERTANI ABDERRAZAK, Environment, Agriculture, sustainable development, Tunisia**

Requirement to publish achievements at least annually, and to have open stakeholder meetings at local level similarly - **Dr Andrew Dlugolecki, insurance and finance/Europe, Scotland**

Promote the investment - **Teresa Tattersfield, sustainable development projects, Mexico**

Participatory follow-up - **Redouane BOULGUID, Development, Morocco**

Assessment of Institutional capacity of local organisations - **R.Seenivasan, Water, Microfinance, Agriculture and Rural Development, India**

Necessary for follow up - **MAIMO MARY MAH, communication for behaviour change, Cameroon**

Media report - **Eka Budianta, Business, Indonesia**

Institutional updates - **Okelo Madukaife, WEST AFRICA, Nigeria**

Institutional Issues in Monitoring and Implementing Climate Change Programmes - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Identify local groups with the greatest potential to work with local populations and effectively interface with governments and donor agencies to manage local education and other programs. - **Sophia Klempner, Central America / public health/health education, Costa Rica**

How do we set infrastructures to cope with all this? - **WAFO David, f teaching foreign Languages/ African literature, Cameroon**

Funding of Institutions dealing with the management of impacts of climatic change. - **Adekunbi Kehinde Omideyi, Developing Countries, Nigeria**

For sustainability of skills and abilities to manage impacts there is need for projects that give the local people the capacity to own the skills and to be able to pass on the skill so that this becomes an on-going process. This is different form donors and government coming in to assist on a perpetual basis - **Dorcas Kayo, Energy, Zimbabwe**

Focus on local governments; closest to the public and relevant project management and implementation - **Theresa Subban, urban and environmental management, South Africa**

Empowerment of public sector agencies and provision of equipments to monitor impact of climatic change. - **Olayiwole Onasanya, Sub-saharan Africa /Agronomist, Nigeria.**

Development of SD indicators - **Antonio Rico Lomeli, Municipal Government, Mexico**

Construction and reinforced of national, regional and global networks of monitoring and operational observing systems. Intensive and free exchange of scientific knowledge about risks and possible measures to mitigate it. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Computer modelling - **Hammad Naqi, Environment/ water resources management, Pakistan**

Capacity building for awareness - **Musarrat Jabeen, Education, Pakistan**

As mention in Q 5.6 - **Patricia Gerez-Fernandez, Forest ecology and management, Mexico**

5.9 Additional areas for Research - 1

Specific Tools or Protocols to Cope with Climate Change (By Topics: forest, water, etc.). Specific project or strategy - Which protocols or tools are the most efficient to cope with Climate Change. Establish them. Promote them. Hold these tools or protocols for the rest of our lives- **Carlos Almenara V., Health, Peru**

Understanding the role of corporations. Specific project or strategy - Understanding the managerial and decision-making role of multinational corporations with respect to climate change. In addition, more research is required to understand the role of companies within the resilience of eco-regions such as high-latitude regions, which are strongly being affected by climate change (and other development) (e.g., among arctic and sub arctic eco-regions). - **Gail Whiteman, business issues; high-latitude eco-regions, The Netherlands**

Gender and Climate Change. Specific project or strategy - There are some subtle but critical issues, which may not be picked unless gender is given special focus in climate change. Societies in rural areas mostly have their own behavioural peculiarities, which need to be understood for sustainability of projects - **Dorcias Kayo, Energy, Zimbabwe**

Civil Defense training. Specific project or strategy - The training of common people like teachers, salesmen, clerks, accountants to organize and serve as references in case of disaster, tragedy or acute occurrence of drought, or floods. - **Samuel Ribeiro Giordano, Agribusiness, Brazil**

Anthropogenic effects on climate change. Specific project or strategy - still need to improve our understanding how human activities affect climate - **George Boire, environmental risk; insurance, Canada**

Food security. Specific project or strategy - See 5.3, above. - **John Ingram, food security/environmental change, UK**

Public Perception of Impacts. Specific project or strategy - Public Perception of Climate Change Issues and the Management of Change - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Renewable energy. Specific project or strategy - projects to develop and to ease access to renewable energy, e.g. solar energy in order to stop deforestation and to sustain particularly women in third-world countries. - **Bokoum Djibril, Education, Germany**

Initiatives to mitigate climate change. Specific project or strategy - Projects and strategies that integrate efforts to: mitigate climate change, recover forest areas, and poverty alleviation; Feasibility analysis for carbon sequestration projects - **Eduardo H. Ditt, Landscape planning, Brazil**

Economic impacts and costs of C.C. Specific project or strategy - Adapting industries and production sectors to CC - **Mireille Atallah-Augé, Integrated land use planning – natural resources management, Lebanon**

Integration with mitigation. Specific project or strategy - it is false to divorce mitigation and adaptation so completely, as energy is a key aspect of development and also climate change. Sustainable energy needs to be a project consider how it can be resilient to impacts, but also avoid more emissions, and assist development - **Dr Andrew Dlugolecki, insurance and finance/Europe, Scotland**

Integration of Climate Change topics. Specific project or strategy - It is difficult to rank these because they are all interrelated. Perhaps there is a sequence that makes this work more useful given a certain stage of readiness of the public, businesses and governments that varies significantly by country. There are countries (industrialized) that are more advanced in awareness because they have assessed a greater risk. Therefore these questions and the answers will depend on the country. The context that I have addressed these questions is a global perspective. - **Randy Sadewic, Renewable Energy, USA**

Education. Specific project or strategy - Introducing climate change issues into school curriculum's - **Edouard Yao, West Africa/Education, Ivory Coast**

Research efforts on building relevant scientific methods for monitoring in the developing world and on the African continent. Specific project or strategy - institutional response timeously - i.e. institutional restructuring to undertake function - **Theresa Subban, urban and environmental management, South Africa**

Mitigation strategies. Specific project or strategy - if climate change is imminent we should find strategies to mitigate it. Carbon sequestration and the change to other alternative energies should be researched deeper - **Luisa Montes, green finance, Mexico**

Land fill life cycle reduction. Specific project or strategy - If you look in to it the globally large tract of land is being occupied by the wastes with special reference to the developing and under developed countries. There is strong need to exploit the biotechnological options in order to reduce the biodegradation period of organic waste from present average period of 20 years to four five years. This is a feasible option. - **Dr.Anil Kumar Agnihotri, environmental microbiologist, India**

Impact on drive for industrialisation and SMEs development. Specific project or strategy - How the economic growth could be adversely impacted. What limitations it has for SME development - **Odele Muyiwa, Sub Saharan Africa/ Biodiversity and natural resources management, Nigeria**

Climate change and business: how to make them interested? Specific project or strategy - Financial and economic mechanisms for business participation in CDM and JM of the Kyoto Protocol. Renewable energy as a vital part of energy strategy. - **Tatiana Faizoullina, energy, Russia**

Drought tolerant crops. Specific project or strategy - Developing breeding programmes drawing on successful crops grown by farmers and improving key characteristics - **Rachel Berger, agriculture and NRM, UK**

Building resources literacy. Specific project or strategy - Building resource literacy - **Musarrat Jabeen, Education, Pakistan**

Social Marketing & Climate Change. Specific project or strategy - Building educational resources for the use of social marketing techniques to influence behaviours that impact climate change and adaptation. - **Brian Smith, Local Government, Canada**

Marine and coastal ecosystems. Specific project or strategy - As potential areas of major impacts but also as alternative sources of food, energy and natural protection, research linked to climate variables must be developed. Developing of better environmental education and observing systems are of strategic importance on these areas. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Why governments do not worry about climate change? - **Jos, Manoel Pereira de Siqueira, Energy, Brazil**

There is not enough data on C Sequestration potential of various trees, the rotation of forests with the objective of C sequestration is poor and unconvincing. - **Syed Mamood Nasir, Biodiversity, anthropology, forestry, Pakistan**

Systemic thinking and links to different disciplines, as well as cross-sectoral research - **Sustainable development/climate change, Sweden**

Social competencies - **Dr. Azhar Mansur Khan, Project Management, Pakistan**

Regional Level variations and impact - **Mr. Ganesh Pangare, Water Resources Management, India**

Reducing vulnerability to climatic variation – **Anon, UK**

Reducing vulnerability - including corruption, poor governance, inequity etc. - **Lisa Schipper, water management/risk and vulnerability/adaptation to climate change, Sri Lanka**

Raising capacity of top Media decision makers - **Karla Matos, Sustainable Development/Agenda 21/Implementation of Conservation Units, Brazil**

Raising African leaders awareness of climate change. - **DEGUENONVO, West Africa, Benin**

Public education - **Davidson Omole, Economics/Finance, Canada**

Overview and trends of climate change and development for the past 25 years - **BABATUNDE OLOKO, civil engineering, Nigeria**

Networking and enhancement of international solidarity - **Redouane BOULGUID, Development, Morocco**

Mitigation options - **Catherine Warburton, Climate Change, South Africa**

International cooperation - **Yiming WU, South of China, China**

Impacts of free trade in climate change - **Martha Delgado, Water, citizen participation and environment, Mexico**

Impact of the climate change on the poverty - **Ambroise Urbain FOUTOU, Water and Energy (West Africa), Mali**

Geographical and spatial impact in different areas - **Sajjad Haider, education, Pakistan**

Environmental migration - **Haydea Izazola, Population studies/demography, Mexico**

Energy saving and green gas reduction - **Song Guojun, China, China**

Did we adjust to change in the past? And if so how? - **K V Devi Praad, Environmental Policy, India**

Development of indicators of climate change - **Patricia Arceo, Socioeconomics of Environment and Natural Resources, Mexico**

Define the most sectors of effect on climate change for each industrial country - **OUERTANI ABDERRAZAK, Environment, Agriculture, and sustainable development, Tunisia**

Combat desertification - **KLUTSE RAOUL AMATEVI, Africa, Agric development, Natural resources management, Togo**

Climate Change and Biodiversity Change - **Andrey Laletin, Forest ecology, Russia**

Benefits of mitigation (economic) - **Lars Moller, EU 25 and global CC policy, European Community**

Awareness in developing countries and especially in rural areas - **Ejaz Sikandar, Rural Development, Pakistan**

Awareness program for people in government - **Fatima Lah, TV, USA**

Accountability - Who is responsible for what? - **Eric Castaares, Interdisciplinary, Mexico**

Raising socioeconomic groups awareness on the impact of climate change - **NISSACK Céline Angèle, Economy, Côte d'Ivoire**

Renewable Energy Sources - **Gentile Chasaya, Water and Sanitation Services, Zambia**

Climate Change and regional / global stability - **RUZIGANDEKWE Fidele, Wildlife Conservation, Rwanda**

Cleaner fossil fuels - **Magui Henry, East Anglia, UK**

Mental health - **Zhou Haicheng, Health education and health promotion, China**

People's media - **Eka Budianta, Business, Indonesia**

Specific project or strategy - Monitoring the impact of Climate change on the food chain, food security and the correlation (if any) with dependency ratio. - **ADEBAYO OKUWOB, Population Economics, Nigeria**

5.10 Additional areas for Research – 2

Alternative energies. Specific project or strategy - Widespread use of alternative energies is not yet a reality further R & D is needed. - **Luisa Montes, green finance, Mexico**

Environmental Education. Specific project or strategy - To be introduced into the job places, into curricula - **Bokoum Djibril, Education, Germany**

Social Values and Climate Change. Specific project or strategy - Social Values and Willingness to Accept Climate Change Policy Options - **Boyowa Anthony CHOKOR, Environmental Perception and Management, Nigeria**

Monitoring carbon sequestration. Specific project or strategy - Projects to measure and monitor carbon sequestration through forestry and agro forestry activities; Projects and strategies to develop and standardize tools and procedures for carbon monitoring. - **Eduardo H. Ditt, Landscape planning, Brazil**

Integration of climate change mitigation strategies with other national strategies. Specific project or strategy - Integrative strategies - **Musarrat Jabeen, Education, Pakistan**

Public awareness so they can serve as watchdogs. Specific project or strategy - campaigns involving the wider public more resting this responsibility with the local governments to co-ordinate and report on - **Theresa Subban, urban and environmental management, South Africa**

Local Government Impacts on Climate Change and Adaptation. Specific project or strategy - Building international partnerships (e.g. twinning of cities in developing and developed countries), to promote the understanding of local government impacts on climate change and adaptation (e.g. experience with community education, the reduction of landfill gases, use of alternative energy. - **Brian Smith, Local Government, Canada**

Synergy risks. Specific project or strategy - Experiments and models construction about synergies between impacts on different levels must be developed. - **Amparo Martinez-Arroyo, ocean-atmosphere interactions, Mexico**

Cleaner Production Technologies - **Gentile Chasaya, Water and Sanitation Services, Zambia**

Water resources - **John Ingram, food security/environmental change, UK**

Regionalised models - **Lars Moller, EU 25 and global CC policy, European Community**

Project management - **Dr. Azhar Mansur Khan, Project Management, Pakistan**

Policies to back responsible way of doing business i.e. manufacturers - **Fatima Lah, TV, USA**

Peace and climatic change - **Esther Towo, Tanzania**

Mitigating the impacts of the climate changes in each regions - **BABATUNDE OLOKO, civil engineering, Nigeria**

Link with disasters - **Lisa Schipper, water management/risk and vulnerability/adaptation to climate change, Sri Lanka**

Impacts of climate change in water management - **Martha Delgado, Water, citizen participation and environment, Mexico**

Impact of the climate change on the human health - **Ambroise Urbain FOUTOU, Water and Energy (West Africa), Mali**

Elaborate good and applicable strategies for each country has ratified the convention - **OUERTANI ABDERRAZAK, Environment, Agriculture, sustainable development, Tunisia**

Effect on sustainable development policy of the nation - **Odele Muyiwa, Sub Saharan Africa/ Biodiversity and natural resources management, Nigeria**

Development of renewable energies - **Redouane BOULGUID, Development, Morocco**

Coping strategies to deal with climate change - **Mr. Ganesh Pangare, Water Resources Management, India**

Communication citizens awareness and participation - **Eric Castaares, Interdisciplinary, Mexico**

Climate Change and Permafrost Melting - **Andrey Laletin, Forest ecology, Russia**

Climate change and environmental justice - **Karla Matos, Sustainable Development/Agenda 21/Implementation of Conservation Units, Brazil**

Adaptation possibilities - **Catherine Warburton, Climate Change, South Africa**

Impact of Climate change on population growth. - **ADEBAYO OKUWOBI, Population Economics, Nigeria**

Alternative energies - **Magui Henry, East Anglia, UK**