**Regional Action on Climate Change (RACC)**

**Session III - Regional Resilience to Climate Change in the Asia-Pacific Region**

**Raj Paroda**

The Asia-Pacific Region, inhabiting 60% of global population, is an agriculturally vibrant region, where 80% of smallholder farmers reside and contribute to major global food demand. Almost half of the world’s poor living in Asia Pacific depend mainly on agriculture for their livelihood. At the same time, the region is responsible for 50% of the greenhouse gases, 28% of which are emanated from agriculture, including land degradation.  In fact, region is 3-5 times more stressed due to abiotic and biotic pressures and the food production is expected to decline by almost 20% by 2030 on account of global climate change.

In view of above, there is an urgency to benefit from both adaptation and mitigation as envisaged in Paris Agreement as well as Sustainable Development Goals (SDGs). A Twin-pillar strategy around Genetic Resource Management (GRM) on one side and the Natural Resource Management (NRM) on the other is thus central for all developing countries.

Fortunately, AP region is endowed with rich agro-biodiversity of plants, livestock and forest tree species. Many countries have already benefitted through adaptation strategy using short duration cultivars tolerant to climatic variations such as heat, drought, salinity, floods etc. In future, the region will be a major supplier of genes for unique traits associated with high productivity, nutritional quality, resistance to biotic and abiotic stresses and better adaptation to climatic change. Accordingly, the genetic enhancement using MAS, phenotyping, genetic engineering, genome editing, Artificial Intelligence (AI), Big Data etc. will henceforth be critical.

On the contrary, progress on natural resource management, otherwise so critical for resilience in agriculture, is relatively slow despite considerable efforts made towards climate smart agriculture (CSA). It demands urgently the scaling of technologies that can help reduce use of water, energy, nutrients etc. Innovations like precision land leveling, on farm water harvesting, micro-irrigation, conservation agriculture, use of decision support tools for nutrient management, fertigation, mixed farming around livestock, fish etc. are there but their adoption is at much slower pace. Also early warning systems and the availability of meteorological data well in time through effective national and regional cooperation would benefit much but not within the reach of smallholder farmers. In fact, the region needs urgently GxExM strategy to make "Grey Areas Green" by scaling practices around conservation agriculture for sustainable intensification (CASI). In all, a well coordinated regional consortium approach is required.

In Asia pacific region, the GHG mitigation strategy demands a three pronged strategy:

I. ***Promoting clean energy:***  through the use of CNG, ban on use of coal for heavy industry, generation of solar power, promotion of electric cars etc. for which countries like Bangladesh, China, India, Indonesia, Malaysia are making significant progress but much needs to be done still in the region

II. ***Minimizing use of fossil fuel:*** by exploring alternate potential sources like generation of biofuels from sugarcane and maize, crop residues (like rice and wheat straw) and trees such as Jatropha.

III. ***Enhancing carbon sequestration***: through use of agro-forestry, sivi-pastoral systems, increasing forest cover, conservation agriculture specially in the dryland areas linked to incentives for environmental services, crop insurance etc.

Overall, scaling of the new technologies and practices, for which good institutions, efficient advisory services for knowledge dissemination, trained human resources (especially youth including women), regional and global partnership and above all enabling policies with higher investments in AR4D are needed. Without these, achieving resilience in agriculture in Asia Pacific would rather be difficult. The cost of inaction will be much greater both in financial and environmental terms. Therefore, time is ripe for a collective action.