



***Decreasing the vulnerability of the agricultural systems in the Republic of Moldova to climate change – operationalization of the agenda on climate change***

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## The concept of sustainable agriculture

- Aims: healthy environment; economically profitable; social-economic equity.
- Principle: meeting the current needs without compromising the ability of the future generations to meet their own needs.
- Natural resources should be preserved/developed for a longer period of time.
- A systemic approach is essential for the correct understanding of sustainability – from the individual agricultural unit to the local ecosystems and the communities affected by this unit.



## Agriculture and Future

- Globalisation of crops and of sales markets for agricultural products.
- Informational development and the progress of the biotechnologies.
- Fundamental structural changes of our families and as a consequence of the workforce.
- These changes will also expand over distribution, trade and consumption of food products.
- New global economic factors.



## Agriculture and Climate

- Traditionally, agriculture is developing under “normal” climate conditions, specific for the given region.
- Agriculture reacts to climate change depending on the frequency and intensity of the extreme conditions it is subject to.



## Changing the Management System

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- Plant growers may adapt to the climate change by improving the management practices of plant growing, for example selection of crops, management of fertilizers, establishing the best planting/seeding and harvesting terms, etc.
- Livestock producers may adapt by developing the management practices that would reduce the exposure of animals to the thermal stress.

## Adjustment Strategies: Options

- Infrastructure: developing the storage facilities for food products; rehabilitating and developing the objectives for accumulation and rational use of water; setting up facilities for the development of alternative energy sources; others.
- Capacities: development of the quick warning system; strengthening the comprehension capacity about the factors that put stress over the agricultural production; management of drought related risks; a monitoring network concerning climate evolution; new sales markets.
- Policies: limiting forest exploitation (stopping deforestation); enhancing the management of natural resources, particularly concerning preservation and reduction of water consumption; development of local management plans; facilitation of access to credits.
- New practices: incorporation of plant residues into soil; fertilizer management; practices of working the land and caring for the plants with a minimal physical impact on the soil; agro-technical practices aimed at reducing soil losses; introduction of crops with a short rotation and maximum tolerance to rising temperatures; intercalated crops and introducing crop rotation with the view of fighting diseases and pests; etc.



## Adjustment Strategies for the Vulnerable Groups

- Identifying the adjustment strategies that would favour the most vulnerable groups.
- For instance, the strategies that deal with large scale agriculture and irrigation can involve extensive operations generating benefits of national interest, but may negatively affect the local population.
- The adjustment should have an ascending character “from down up”, while identifying the local and future risks.



## The contribution of science and local communities

- Development of adjustment technologies and research models at regional level, that would anticipate climate evolution, particularly referring to the early warning systems (research on the potential impact on agriculture).
- Development of the informational system concerning climate change at the agricultural unit level and providing farmers with information peculiar to the region and their activity area.
- Development of projects regarding technology transfer, awareness raising programs and training of farmers with the view of promoting advanced agricultural practices.
- Planning of research/evidence domains, which would strengthen the partnership between farmers and science, such as research projects concerning technologies for generating energy at the agricultural unit level.



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## Reference Study

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- ◆ Analysis of the economic, social and environmental situation and establishing the main parameters.
- ◆ Identifying the factors that limit the agricultural production.
- ◆ Identifying the zones and groups vulnerable to climate change.
- ◆ Assessing the reaction capability of agriculture towards climate change.
- ◆ Shaping the short, medium and long term evolution of climate.



## Adjustment Strategy: a few key elements

- ◆ General aspects of the rural area.
- ◆ The impact of the climate change on agriculture.
- ◆ The impact of agriculture on climate change.
- ◆ Adjustment options, including management of risks related to climate change and of financial instruments (associated costs).
- ◆ Bioenergetical policies, safety of the market and trade in food and energy products.
- ◆ Regional and international cooperation possibilities, including fulfilling the commitments taken by the Republic of Moldova within the framework of conventions and bilateral and multilateral agreements.