United Nations Framework Convention on Climate Change

Private Sector Initiative actions on adaptation

Title of case study*	**Provide seed treatment for more efficient resource use**
Date of submission*	19/12/2012
Name of organization(s)*	**Bayer**
NWP Objective* *Select the objective(s) of the NWP that the case study responds to.*	The objective of the Nairobi work programme is to assist all Parties, in particular developing countries, including the least developed countries (LDCs) and small island developing States (SIDS), to: ☐ **improve their understanding and assessment** of impacts, vulnerabilities and adaptation to climate change; and ☒ **make informed decisions on practical adaptation actions and measures** to respond to climate change on a sound scientific, technical and socio-economic basis, taking into account current and future climate change and variability.
Objective of case study* *Describe the specific objective of case study.*	Bayer has developed seed treatments that have proven over many years that early protection pays off. This case study shows how protecting individual seeds from diseases and pests during their early development stage saves water, labor time and costs and increases the ability of healthier plants to absorb more carbon.
Actions* *Describe the activities to meet the case study objective, highlighting organizations, communities and/or experts to be engaged.*	Bayer CropScience develops innovative technologies and solutions for sustainable land management approaches. A holistic approach to land and climate change management includes ecosystem health and water conservation. In the future there will be an even greater need for practical measures to adapt to weather-based climate change effects and to mitigate greenhouse gas (GHG) emissions. For Bayer CropScience, the challenge is to anticipate the potential future technology needs of farmers. Two technologies are currently in the pipeline: - stress-tolerant plant varieties that help plants adapt to short term abiotic stress, such as drought, salinity, heat or cold; and - nitrogen use-efficient varieties that will help mitigate one of the most potent GHGs: nitrous oxide (N2O). Today's healthy and more vigorous plants are already much more resilient and hence adaptable to climate change effects. They produce more biomass and store more carbon than plants whose potential remains unexploited. Worldwide the health of crops is threatened by about 25,000 pest and diseases. A success story in crop protection is found through seed treatment, which restricts product use to individual seeds and especially protects the young vulnerable plants "from within". This technology also contributes to: - water use reduction; - labor time and cost savings; - ecosystem benefits, as application is directly targeted towards the pests; - higher biomass production (carbon storage) from healthier plants; and - eco-efficiency, including mitigation from reduced tractor operations
Expected results* *Describe the envisaged outputs/benefits of the case study/*	From an ecosystem's health perspective seed treatment holds many benefits. It is a highly targeted way of applying crop protection products: instead of an area of one hectare, only less than 1% of it comes into contact with the product. The treatment only controls insects and pathogens that suck sap from the plants, eat them or damage them by infestation. Hence, beneficial species that live on and around the plants are protected, an aspect that is widely considered in integrated crop management approaches. Seed treatment, when used properly, also avoids drift to adjacent plants, headlands and water bodies and consequently protects non-target species inhabiting these areas. Seed treatment is done in specialized facilities. As the seeds carry much of their own protection for the first two to three months of their lives, up to two pesticide spray applications can be avoided. Therefore about 200 liters of water, which are used on average to apply crop protection products on one hectare of land, are no longer needed,

	Seed treatment is also economical for farmers as it saves a lot of labor time and costs. Many large- and small-holder farmers alike prefer seed treatment as it frees up time during a busy period of the year. This gives them time to pursue other important activities, including income generating ones in other sectors.
Region(s) relevant to case study*	☒ All regions ☐ Africa ☐ Arab States ☐ Asia ☐ Caribbean ☐ Central America ☐ Europe ☐ Least Developed Countries ☐ North America ☐ Pacific ☐ Polar regions ☐ Small Island Developing States ☐ South America
Business sector of the organization(s)*	☐ Intergovernmental organization ☐ National/regional programme/initiative ☐ Non-governmental organization ☒ Private sector entity ☐ Research institute ☐ UN organization/agency
Adaptation sector relevant to case study*	☒ Capacity building, education and training ☐ Energy ☐ Finance and insurance ☒ Food, agriculture, forestry and fisheries ☐ Human health ☐ Oceans and coastal areas ☒ Science, assessment, monitoring and early warning ☐ Technology and Information & Communications Technology (ICT) ☐ Terrestrial ecosystems ☐ Tourism ☐ Transport, infrastructure and human settlements ☒ Water resources
Adaptation activity delivered by case study*	☒ Capacity building ☐ Climate-resilient development planning ☐ Communications and awareness-raising ☐ Disaster risk reduction ☒ Early warning systems ☐ Education ☐ Financial support ☐ Humanitarian assistance ☒ Knowledge management ☐ Monitoring and evaluation ☐ Pilot adaptation programmes/projects ☐ Risk/vulnerability mapping ☐ Training
Work areas of the NWP*[1] *Select among the nine work areas of the NWP that apply to the case*	☒ Adaptation planning and practices ☐ Climate modelling, scenarios and downscaling ☒ Climate-related risks and extreme events ☐ Data and observations

*** Mandatory fields**

[1] **More information on the Nairobi work programme work areas is available at: <http://unfccc.int/nwp>**

study.	☐ Economic diversification ☒ Methods and tools ☒ Research ☐ Socio-economic information ☒ Technologies for adaptation
Target group*	☐ Academics ☐ Children ☐ Communities ☐ Policy makers ☒ Practitioners ☒ Private sector ☐ Women
Link *Further information on relevant websites.*	http://www.wbcsd.org/Pages/EDocument/EDocumentDetails.aspx?ID=136&NoSearchContextKey=true

*** Mandatory fields**

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