

Impacts of Sand and Dust Storms on The Middle East



Somalia is a country located in the Horn of Africa. It is bordered by Ethiopia to the west, Djibouti to the northwest, the Gulf of Aden to the north, the Indian Ocean to the east, and Kenya to the southwest

INTRODUCTION

- 1. The Middle East, largely made up of the Arabian Plateau and the Tigris-Euphrates Basin, is an area of active wind erosion. The Arabian Plateau slopes down from the southwest high terrains (1,500-3,000 m) bordering the Red Sea towards the northeast flat lands (50-200 m) adjacent to the Persian Gulf.**

**INDICATORS OF
DUST AND SAND
STORMS
IN MIDDLE EAST**

Physical Indicators

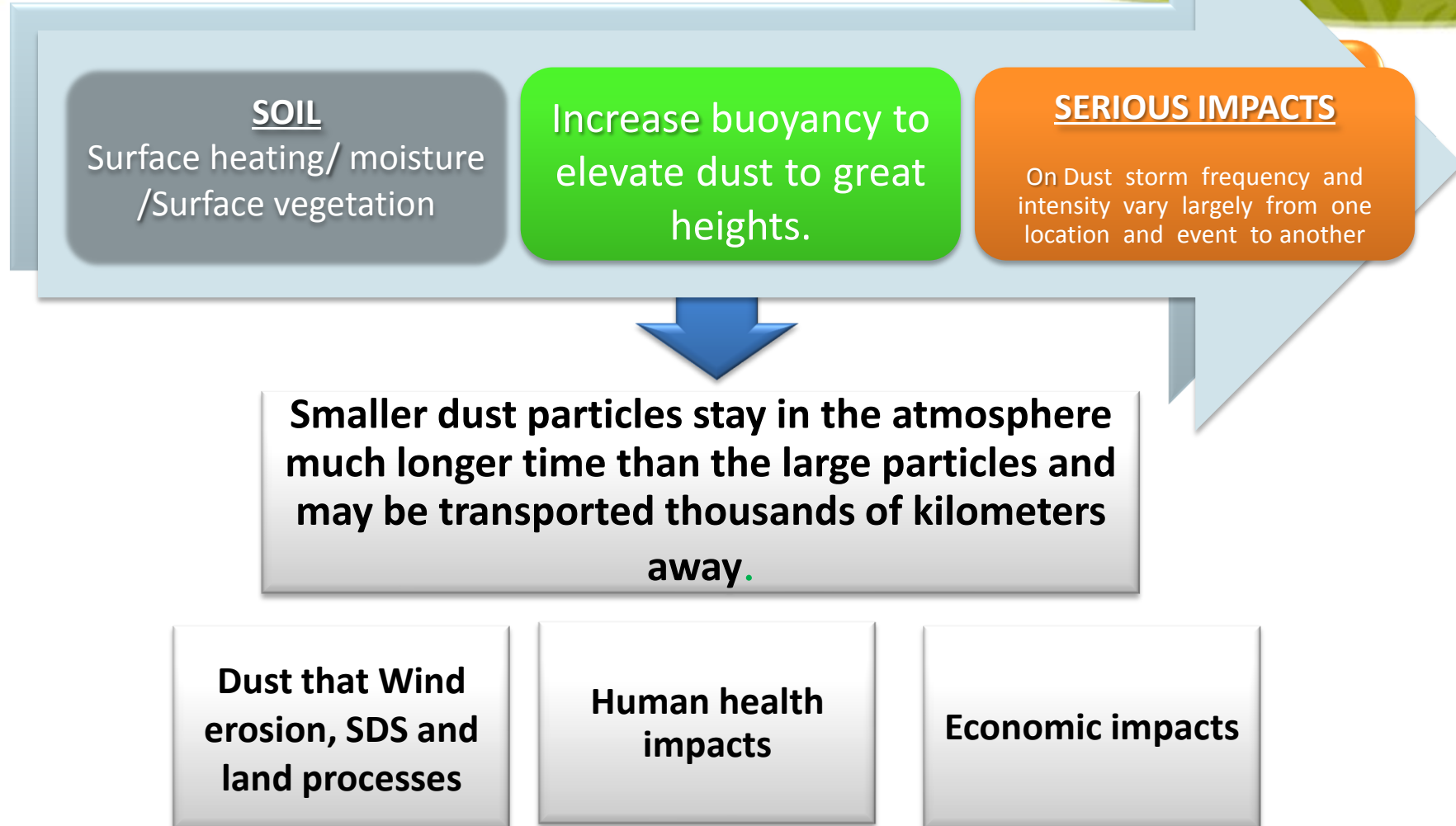
- ❖ Decrease in soil organic matter.
- ❖ Decrease in soil fertility.
- ❖ Increases severity of Dust formation and movement in coastal areas.
- ❖ Decrease the quality and quantity of ground and surface water.
- ❖ Soil erosion by water and wind , resulting sheet erosion by removal of topsoil layer.
- ❖ Loss of soil capacity for resilience.

BIOLOGICAL INDICATORS

Vegetation

- ❖ Decrease in cover and ground biomass.
- ❖ Alteration of key species distribution and frequency

Monitoring of Dust Storms the change(The Dust storms Formation)



Background

- “Prevention of deforestation and degradation” is one of the priority program in SDS-UNCCD
- Lack of building good coordination across region(Middle East)

In order to ;

- Stop the impact of the influx of soil and dust



Capacity Building for the forestry officers of region

PLANNING FOR FUTURE BASIC INFORMATION

■ Duration :

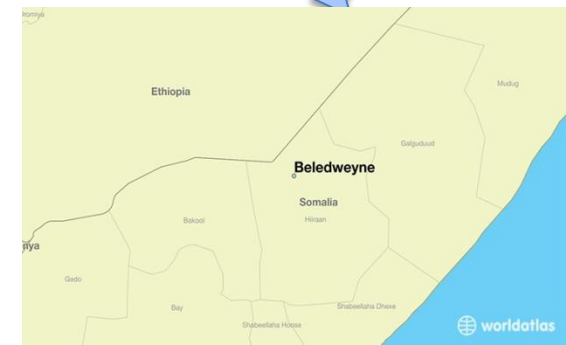
March 2018 – March 2019 (1 years)

■ Project purpose :

The capacities of the stakeholders needed to control land degradation and promote land recovery are reinforced in order to reduce the affect of Drought

■ Target areas :

Central region(Bladweyn and Dhuso villages



Impacts of Sand and Dust Storms on Agriculture and Potential Agricultural

Outline

- ❖ Impacts of SDS on Agriculture
- ❖ Measures to Combat SDS
- ❖ Potential Agricultural Applications
 - a) Tactical
 - b) Strategic
 - c) Research

Impacts of Sand and Dust Storms

- ❖ Crop and **livestock losses**
- ❖ Soil productivity losses
- ❖ Economic impact
- ❖ Transport impact
- ❖ Environmental impact
- ❖ Positive impact

Impacts Of Crop And Livestock

- ❖ Loss of plant tissue and reduced photosynthesis
- ❖ Burial of seedling under sand deposit
- ❖ Delayed Plant Development
- ❖ Increased end of Drought Season
- ❖ Causing Injury and Reduced Animal Productivity

Impacts – Soil Productivity Losses

- ❖ Loss of the most fertile fraction (K and P) of the topsoil and can be transported long distance
- ❖ Increases soil erosion and accelerates the process of land degradation and desertification That cause loss of Nutrient

Economic Impacts

- ❖ Direct economic loss caused by the strong Sand – Dust Storm
- ❖ Annual on-farm costs of wind erosion

Other Impacts

- ❖ Filling up Irrigation Canals With Sediment
- ❖ Affecting water quality of rivers and streams, and affecting air quality

Positive Impacts

❖ Mineral dust has an important role to play in the supply of nutrients and micronutrients to terrestrial ecosystems eg., . 2.5 and 0.2 kg ha⁻¹ of K and P, respectively, from dust deposition in the Sahel.

❖ The accumulation of sand-dust from the Sahara into Amazon Valley brings 1-4 kg of phosphate per ha per year

SDS Control or Combat on PA

Focus on preventing the soil/sand from being picked up in the source area

- ❖ **Reducing the impact of wind speed use of windbreaks or shelterbelts**
- ❖ **Protecting loose soil particles by use of crop residues or plastic sheets or chemical adhesives**
- ❖ **Increasing cohesion of soil particles by conservation tillage operations or soil mulching**
- ❖ **Soil Conservation Practices**



Potential Agricultural Applications of a SDS

- ❖ **Tactical Applications For Mulching**
After Planting – daily, weekly
- ❖ **Strategic Applications**
- ❖ **Research**

Tactical Applications (advices)

Near-term alerts for agricultural communities to take

such as

- ❖ harvesting maturing crops (vegetables, grain
- ❖ sheltering livestock, and
- ❖ strengthening infrastructure (houses, roads, crop storage) for the storm

Strategic Applications



❖ Planning windbreaks and shelterbelts
(direction, size, etc)

❖ Planning infrastructure and crops

❑ Post-storm crop damage assessments

Solution sand dust storms

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- ❖ . Share information, lessons learnt and best practices, exchange views and expertise
- ❖ . Enhance public awareness on the impact and cost of Sand and Dust Storms on human health, agricultural practice, food security, infrastructure,
- ❖ Strengthen research activities for effective monitoring, impact based assessment and forecasting and early warning mechanism for Sand and Dust Storms, to address disaster prevention and mitigation

END

Thank you for your attention