



# Yemen Experience in Climate Change

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# Background

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- ❑ **Location of Yemen:** In the South-West Asia and Arabian Peninsula.
  - ❑ **Area:** 555,000 Square km with 2200 km coastal line, 183 islands along the Red Sea and the Gulf of Aden and the Arab Sea
  - ❑ **Population:** 21,385,161 inhabitants, more than 75% are living in rural areas according to 2005 statistics.
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# Vulnerability of Yemen to Climate Changes

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- ❑ Water scarcity;
  - ❑ Short and heavy storms;
  - ❑ Floods;
  - ❑ Long dry periods;
  - ❑ Desertification;
  - ❑ Land degradation and soil erosion.
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# Vulnerability of Yemen to Climate Changes

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- Climate change impacts are expected to be particularly acute on account of historical patterns of climatic variability, of high levels of water scarcity, and of the country's reliance on climate-vulnerable sectors such as agriculture and fisheries.
  - With per capita annual renewable water resources of only 223 m<sup>3</sup>, Yemen face extreme water scarcity.
  - Annual precipitation in the country is on average very low, ranging from less than 50 mm in the coastal plains and desert plateau regions to about 800 mm in the western mountainous highland region.
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# Vulnerability of Yemen to Climate Changes

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- What makes matters worse, is the distribution of precipitation in Yemen, as it is characterized by seasonally intense and short-lived heavy storms that produce more flash floods leading to soil erosion and terraces degradation.
  - Such heavy storms normally followed by long dry periods—leading to widespread drought, desertification and land degradation.
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# Vulnerability of Yemen to Climate Changes

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- Groundwater is being mined at an alarming rate and depleted at more than four times the recharge rate in major aquifers, including the Sana'a basin aquifer.
  - With additional consequences induced due to climate change impacts (such as changes in precipitation patterns) , water stress is likely to get worse.
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# Adaptation priorities under NAPA

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## **key sectors identified:**

- Water Resources
- Agriculture
- Coastal zones
- Cross cutting issues ( awareness, capacity building, education, and databases)

12 high priority projects

**Cost:** About USD30 millions

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# Country wide consultation process

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# Ranked priority adaptation projects (1)

	<b>Project title</b>	<b>Sector</b>	<b>Time frame</b>	<b>Budget (USD)</b>
<b>1</b>	Develop and implement integrated coastal zone management	Marine & coastal areas	4 years	3.2 million
<b>2</b>	Water conservation through reuse of treated waste water and grey water from mosques, and irrigation saving techniques	Water and agriculture	3 years	3.2 million
<b>3</b>	Awareness raising on adaptation to climate changes	Public awareness	2 years	0.65 million
<b>4</b>	Establishment and maintaining of climate change database	Cross-cutting	2 years	0.35 million
<b>5</b>	Planting and re-planting of mangroves and palms for adaptation to sea level rise	Marine & coastal areas	5 years	2.45 million
<b>6</b>	Develop and implement programs to <u>improve Yemen's preparedness to cope with extreme weather events</u>	Cross-cutting	4 years	5 million

## Ranked priority adaptation projects (2)

	<b>Project title</b>	<b>Sector</b>	<b>Time frame</b>	<b>Budget (USD)</b>
<b>7</b>	Rainwater harvesting through various techniques including traditional methods	Water and agriculture	3 years	2.81 million
<b>8</b>	Rehabilitation and maintenance of mountainous terraces	Agriculture and land resources	5 years	4.78 million
<b>9</b>	Promotion of research on drought, heat and salinity tolerant varieties	Agriculture and land resources	4 years	3.15 million
<b>10</b>	Sustainable land management to combat desertification and land degradation	Agriculture and land resources	3 years	2.33 million
<b>11</b>	Sustainable management of fisheries resources	Marine & coastal areas	5 years	1.18 million
<b>12</b>	Incorporation of climate change and adaptation into school education	Education & awareness	2 years	0.82 million

## Good practice from coordination within the country/across departments

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- o Consultation and coordination meetings with all relevant institutions;
  - o Identification and development of stakeholders list including government institutions, academia and research institutions, NGOs, fishermen and farmers cooperatives, media, and private sector; (Gender)
  - o Increased awareness among identified stakeholders;
  - o Willingness and interest of different institutions to participate in PPCR
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# Ownership – success factors

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- ❑ Engagement of relevant stakeholders at all stages including preparation, design and implementation;
  - ❑ Developing of criteria for setting priorities;
  - ❑ Focusing on the most vulnerable areas
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# Plans for involving the private sector and civil society in shaping the PPCR

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- Designing a comprehensive consultation process for stage I of PPCR in order to encourage the involvement and engagement of private sector and civil society through active participation in:
    - Workshops,
    - Seminars,
    - Meetings, and
    - Field visits
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PPCR process will assist in awareness raising and capacity building through:

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- ❑ Identification and assessment of accumulated and traditional knowledge for local communities on how to cope with changing climate and extreme events;
  - ❑ Replication and spread of successful practices and experiences;
  - ❑ Design tailor made training and awareness programs including on job training and learning by doing;
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## Relationship of PPCR to ongoing processes and strategies

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- PPCR activities to be designed to build on previous climate change related activities such as NAPA, National Communications, and other assessment activities.
  - Need to conduct synergy assessment in order to mainstream and incorporate activities with plans, strategies, as well as ongoing and planned programs.
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# Climate Change Institutional Structure

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Establishment of CC Board, chaired by Deputy Prime Minister for Economical Affairs, Minister of Planning and International Cooperation and membership of the following institutions:

- Ministry of Water and Environment (MWE)
  - Ministry of Agriculture and Irrigation (MAI)
  - Ministry of Fish Wealth (MFW)
  - Ministry of Finance (MOF)
  - Ministry of Local Administration (MOLA)
  - Environment Protection Authority (EPA)
  - Civil Aviation and Meteorological Authority (CAMA)
  - National Water Resources Authority (NWRA)
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## Proposed criteria for setting up priorities

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- ❑ Contribution to Sustainable Development;
  - ❑ Livelihood security of Local Communities;
  - ❑ Poverty reduction to enhance adaptive capacity;
  - ❑ Synergy with other multilateral environmental agreements and conventions; and
  - ❑ Cost-effectiveness
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# Challenges and Barriers

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- ❑ Weak institutional structures and environmental legislations;( under reform and amendment)
  - ❑ Lack of explicit policies to facilitate the implementation of action plans need to be enhanced.
  - ❑ Lack of appropriate and reliable data and technical capacity to analyze and manipulate these data;
  - ❑ Uncertainties in regional, local climate change scenarios and socio-economic scenarios;
  - ❑ Low awareness at all levels regarding climate change;
  - ❑ Inadequate institutional, technical and financial capacity to develop, modify or interpret existing models and methodologies;
  - ❑ Scarce research work on the practical application of policy measures for adapting to climate change
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***Thank you for your attention***

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