PUSAN Climate and Development Organization

SUMMARY BRIEF · COMMUNITY-BASED CLIMATE RISK ASSESSMENT

When the sand moves in

Sand dune expansion, soil erosion and drought in Garacad, Kulub and Dinowdo, Jariiban District, Mudug, Somalia · Fieldwork 23–24 February 2026

Key messages

- **Moving sand is turning each drought into a lasting loss.** Dunes, loosened by decades of vegetation loss and repeated drought, are burying wells, pasture, homes, schools, health posts and roads in Jariiban's coastal communities.
- **Water has become ten times more expensive.** One water truck delivery now costs about USD 150, compared with about USD 15 before the dunes advanced. Wells fill with sand overnight and the remaining boreholes are overcrowded and often saline.
- **Children are losing school.** About 39.7 per cent of households report sand blocking the way to school; a school in Dinowdo was buried over a single weekend. Families who send children to town spend about USD 114 a month each.
- **Resilience is at the lowest level.** All four ARCD resilience areas scored 1 out of 4, and the communities have no risk map, DRR plan, contingency plan or land use plan.
- **Communities hold the solution's starting point.** Elders named nine native plants that once held the dunes, and youth groups already plant trees and clear roads. What is missing is planning, resources and links to government.

10×
rise in the cost of one water truck

39.7%
of households report blocked school access

USD 114
monthly cost per child schooled in town

1 / 4
score on all four resilience areas



A coastal village in Jariiban District partly buried by moving sand. Photo: PUSAN, February 2026.

About the assessment

PUSAN Climate and Development Organization carried out a two-day community-based disaster risk assessment in the coastal and near-coastal communities of Garacad, Kulub and Dinowdo. The team used the ARCD toolkit and participatory resource mapping, with separate focus groups for women and men, and consultations with elders, youth, pastoralists, community social workers and district officials. Communities mapped affected areas and water points and scored their own resilience across 30 components. The assessment took place during severe drought and Ramadan and covered selected villages only; percentages were reported in community discussions and will be verified by a household survey in 2027.

What we found

Water

Prolonged drought has lowered the water table below the reach of hand-dug wells, and moving sand refills shallow wells, often overnight. Berkads are buried, boreholes serve people and large herds at once, and water is frequently saline and hard. Children and women carry most of the burden of collection, across loose sand and over long distances.

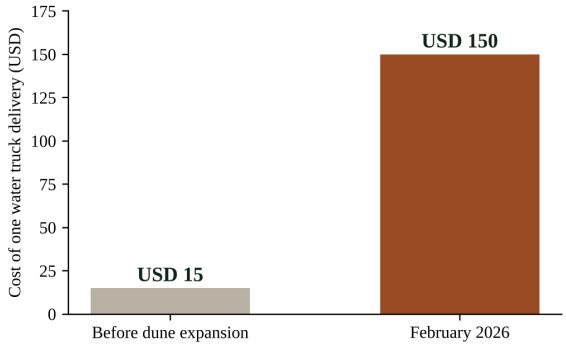

Figure 1. Cost of one water truck delivery (USD). Source: focus group discussions, February 2026.

Livelihoods and markets

Pasture has shrunk and livestock are dying, cutting income from milk and animal sales. Buyers are few and roads are blocked. There are no savings groups, almost no remittances, no insurance and no safety nets, so every shock is met by selling assets or cutting food.

Education

Nearly four in ten households report that sand blocks the way to school, and 7.4 per cent have sent children to relatives in town to keep studying, at about USD 114.31 a month. Some schools are fully buried; others run in heat and dust. Girls living away from home face higher risks of exploitation and gender-based violence.

Health, homes and roads

Health posts have been buried or cut off. Light metal and timber houses offer little protection, and some households have been displaced from sand-filled homes. Blocked roads cut access to markets, clinics and humanitarian aid, and raise the cost of everything delivered by truck.

Capacities and past support

Communities know which native plants once stabilised the dunes, including *Cenchrus ciliaris*, *Acacia tortilis* and *Salvadora persica*, and youth groups volunteer for planting and road clearing. Earlier sand removal by KAALO Aid and Development and a climate impact assessment by the state Ministry of Environment were acknowledged, but did not match the scale of the problem.

Resilience scorecard

ARCD resilience area	Score	Main gap
Understanding disaster risk	1 / 4	Little knowledge of hazards, vulnerabilities and likely impacts
Governance to manage risk	1 / 4	Weak coordination, capacity and resources among authorities and stakeholders
Reducing vulnerability	1 / 4	Infrastructure, services and livelihoods exposed without safeguards
Preparedness for response	1 / 4	Few measures, little training and no resources for emergencies

The communities have none of the basic planning tools: no risk assessment, hazard map, vulnerability and capacity assessment, DRR plan, land use plan, contingency plan, recovery plan or school safety plan. The risks form a chain: drought kills vegetation, wind moves the sand, sand buries water, pasture and schools, losses force families to sell assets or move, and the next drought hits harder. Relief alone will not break this chain unless it is paired with restoring plant cover.

Recommendations

Sector	Priority actions	Timeframe
Water	Emergency water trucking; de-silting and protection of wells and boreholes; raised, sand-protected water points; berkads rebuilt with sand protection; solar boreholes where groundwater allows	Immediate
Livelihoods	Food support for the most vulnerable; livestock feed and veterinary outreach; cash-for-work for sand removal; fodder production; new income options for women and youth	Immediate
Shelter and roads	Clear main roads; repair sand-buried homes and health posts; climate-resilient building	Immediate
Education	De-silt schools and routes; temporary learning spaces; school feeding; protection for children living away from home	6–24 months
Environment	Dune stabilisation with the nine native species; windbreaks and vegetation belts; community resource committees and by-laws	6–24 months
DRR and governance	DRR training; early warning linked to early action; a district contingency plan; better coordination	1–3 years

Delivery should **combine relief with restoration**, so that every water or sand-clearing action is paired with planting and protection; **let communities lead**, through committees with at least 40 per cent women and seats for youth; and **measure what lasts**, such as plant survival, ground cover and the cost of water.

> *"Students left the school on Thursday and came back on Monday to find it completely covered by sand."* *Community members, Dinowdo village*



Focus group with leaders, elders and district officials.



Women's focus group discussion.

Links to national plans

These priorities match Somalia's own commitments. The National Adaptation Plan 2026–2030 puts water and WASH, agriculture and livestock and ecosystem restoration first, and calls for community natural resource governance, sustainable grazing, water harvesting and early warning. NDC 3.0 makes adaptation its core focus, the National Climate Change Action Plan 2025–2030 turns these into costed actions, and dune stabilisation contributes to land degradation neutrality under the UNCCD.

Next steps

Jariiban is the first district in PUSAN's Strategic Plan 2027–2031. In 2027, PUSAN will work with the district authority and communities to turn this assessment into a community-approved district adaptation plan; start dune stabilisation with native species and water harvesting at the worst-hit sites; design early-warning triggers with herders; and run a household survey to verify these findings. We invite government, United Nations agencies and donors to partner with us on the priority actions above.

Contact

PUSAN Climate and Development Organization · www.punsan.org · info@punsan.org · +252 907 37 7643 · Offices in Garowe and Mogadishu, Somalia. The full report, *When the sand moves in* (2026), is available on request.