DPGs FOR CLIMATE ACTION COLLECTION

Framework Compliance Summary

VERIFIED DIGITAL PUBLIC GOOD

PRISM

Open-source software · World Food Programme (WFP)

https://github.com/WFP-VAM/prism-app

An open-source geospatial dashboard that simplifies access to climate and Earth-observation data for disaster-risk monitoring and forecasting. PRISM turns hazard, forecast and vulnerability data into decision-ready risk indicators and email alerts, building national capacity for anticipatory action within the Early Warnings for All and Sendai frameworks.

At a glance

CLIMATE OBJECTIVES	SECTORS	DEPLOYMENT	COUNTRIES ACTIVE
Monitoring · Adaptation ·Tech Transfer & Capacity Building · Cross-cutting	Disaster Risk Reduction · Food Security · Cross-sector	Regional · National	7
OWNER	**TYPE**	**DATA EXTRACTION**	**YEAR LISTED**
World Food Programme	Open-source software	OGC WMS / WCS / Features API · COG / Zarr · PMTiles	2024

CLIMATE DPG FRAMEWORK · COMPLIANCE STATUS All four layers met

L1	**DPG Standard**	Verified & listed on the Registry (13 Feb 2024)	✓ **VERIFIED**
L2	**Climate Alignment**	Climate-relevant by design (EW, anticipatory action)	✓ **MET**
L3	**Infrastructural Approach**	Interoperability L3 · Adoption readiness L2	✓ **MET**
L4	**Measuring Outcomes**	7 countries equipped; KPI reported	✓ **MET**

✦ **Admitted to the Climate Action Collection**

LAYER 1 DPG Standard

PRISM is a verified digital public good, listed on the DPG Registry (MIT licence, https://github.com/WFP-VAM/prism-app), having met all nine indicators of the DPG Standard. Layer 1 is a precondition for entry to the DPGs for Climate Action Collection.

LAYER 2 Climate Relevance

Climate-relevant problem addressed

PRISM simplifies access to climate and Earth observation data for disaster-risk monitoring and forecasting. Through intuitive software, it builds national capacity for climate monitoring and anticipatory actions. PRISM uses geospatial standards and focuses on interoperability for easy systems integration.

Theory of contribution

PRISM contributes to climate action by providing national meteorological and disaster management agencies with up-to-date climate and Earth observation data. This includes forecast-derived risk indicators which enable anticipatory actions (AA). AA follows standard protocols to trigger assistance when forecast indicator thresholds are met. PRISM visualizes this information and publishes email alerts when conditions are met.

Frameworks it aligns with

- Sendai Framework for Disaster Risk Reduction
- Early Warnings for All

How alignment is achieved

PRISM was developed within the context of the Sendai Framework for Disaster Risk Reduction, and has since evolved to meet technology needs of national institutions to monitor climate risks. WFP's Country Strategic Plans align with national planning frameworks, and PRISM is positioned as a form of technical assistance by WFP to governments to achieve national capacity development goals on climate disaster risk reduction. PRISM is increasingly integrated within the Early Warnings for All initiative, providing climate risk information to all via national meteorological and disaster management agencies.

Supported Decisions or Actions

- Operational — early-warning activation, service delivery. Decisions are made by WFP and by government institutions, specifically climate-action working groups leveraging early-warning and anticipatory-action frameworks.

LAYER 3 Infrastructural Approach

Modular design

PRISM is designed as a decoupled, layered geospatial platform rather than a monolithic system. Its frontend deploys independently per country using custom domains and automated scripts, allowing new regional instances to launch without core code modifications. Security and access rely on an abstracted dual-provider authentication system—separating internal staff and external partner sign-in—which

decouples identity handling from core business logic. Data processing is fully composable and source-agnostic, using standardized ETL pipelines, canonical keys, and content hashing to ensure auditability across varied climate inputs. To balance performance needs, raster data uses a dual-backend strategy: Cloud-Optimized GeoTIFFs (COGs) serve fast tile-based map visualization, while Zarr handles pixel-level time-series extraction. Finally, visualization relies on standardized, open protocols (such as OGC interfaces and PMTiles), enabling data sources to be swapped or integrated across external systems without disrupting downstream applications.

Data processing

Ingestion Source-agnostic ETL pipelines per source type: REST API integrations, OGC web services (WMS, WCS), event-based alert feeds (serverless), and cloud-native archives (e.g. CHIRPS precipitation). Ingestion runs as scheduled/serverless jobs, so new countries or data sources are onboarded through configuration, not rebuilding one.

Validation Anchored in provenance: each dataset is authoritative at its system-owner source; WFP-sourced inputs come from established global providers (NASA, ECMWF) with downstream indicators computed by WFP using peer-reviewed methodologies, so data enters PRISM carrying institutional accountability.

Dissemination Interactive map visualization via WMS/COG tile layers in the PRISM dashboard and per-country instances on custom subdomains; a forthcoming shift to COG-based tiling makes outputs more efficiently consumable.

Integrations & Adapters

PRISM exposes and consumes data through open, standards-based interfaces rather than proprietary connectors, so it interoperates cleanly with other systems. Its per-country deployment model lets a national government run its own PRISM instance (local boundaries, languages) while drawing on shared data services, supporting local ownership while allowing reuse by other national systems. Because access is via OGC services (WMS, WCS, Features API) and open formats (COG, PMTiles), any standards-capable external system can consume the same data without custom connectors.

Maturity scales

Interoperability Level 3 / 5 — Standardized

Interoperability Evidence Open, domain-standard geospatial protocols throughout: OGC WMS, WCS and OGC Features API endpoints; cloud-native open formats (COG for tiled visualization, Zarr for time-series); PMTiles for vector datasets. Cross-system precedent: ADAM integration via OGC Features API. Public code on GitHub. (Formal OpenAPI/Swagger developer portal in development.)

Adoption readiness Level 2 / 5 — Documented/Structured

Scalability, Performance & reliability PRISM runs on AWS. Some map and data services run on ECS Fargate, so they can scale with demand instead of relying on one fixed server. Each country has its own frontend instance, so a problem in one country's site doesn't affect the others. All instances share the central HDC data services. The planned COG and Zarr backends will let clients fetch only the tiles or time slices they need, which reduces server load and bandwidth.

Computing & energy intensity PRISM's compute needs are modest. It serves and visualizes data and runs light ETL jobs, with no model training or large simulations. Some map services run on AWS ECS Fargate, so capacity can scale with demand. Cloud-optimized formats (COG and Zarr, being introduced, and PMTiles for vector boundaries) let users download only the area or time period they need, which reduces bandwidth for low-connectivity users.

LAYER 4 Measuring Climate Outcomes

Measurable outcomes it facilitates

- Improved early warning systems (lead time, coverage, accuracy),
- Climate data infrastructure, interoperability, or accessibility improved

Reach in numbers

7 countries equipped with national climate-monitoring systems (Cambodia, Sri Lanka, Mozambique, Malawi, Zimbabwe, Zambia, Tanzania)

Key performance & impact indicators

Category	Indicator Name	Definition / Unit of Measurement	Data Source	Baseline (if available)	Most Recent Value	Reporting Frequency / Evidence Link
Technology Transfer & Capacity-building	Number of countries equipped with national climate monitoring systems	Countries with PRISM deployments	WFP	0	7	WFP reporting

Deployment countries · 7

Cambodia, Sri Lanka, Mozambique, Malawi, Zimbabwe, Zambia, Tanzania

Adopting Organizations

Seven national meteorological and disaster-management agencies run PRISM

- Cambodia National Committee for Disaster Management (NCDM)
- Sri Lanka Department of Meteorology (DOM)
- Mozambique National Meteorology Institute (INAM)
- Malawi Department of Climate Change and Meteorological Services (DCCMS)
- Zimbabwe Meteorological Services Department (MSD)
- Zambia Meteorological Department (ZMD)
- Tanzania Meteorological Authority (TMA)

Evidence & Additional Resources · 9 sources

Live per-country deployments and public agency listings documenting real-world uptake.

Evidence Sources

Impact metrics currently from WFP internal programme reporting; publicly evidenced through the operational per-country instances listed below.

Evidence of Adoption

- Mozambique INAM (PRISM under Data & Tools) —https://inam.gov.mz/
- Sri Lanka DOM (PRISM under Climate) — https://meteo.gov.lk/

WFP also hosts official versions of the platform for each country:

- Cambodia — https://www.prism-kh.info/
- Sri Lanka — https://prism.lka.wfp.org/
- Mozambique — https://prism.moz.wfp.org/
- Malawi — https://prism.mwi.wfp.org/
- Zimbabwe — https://prism.zwe.wfp.org/
- Zambia — https://prism.zmb.wfp.org/
- Tanzania — https://prism.tza.wfp.org/

Independent validation

The product owner has identified the following types of external validation applicable to this solution:

- **Government validation** — real-world adoption, deployment, or formal endorsement by a national government authority — e.g. a ministry, designated national authority, or national meteorological service

The information above reflects the self-reported responses provided by the product owner as part of a structured compliance submission against the Framework for Identifying Digital Public Goods for Climate Action.