

IMPACT CHAINS AND DATA SOURCES

EARTH OBSERVATION FOR HIGH IMPACT MULTI-HAZARDS SCIENCE (EO4MULTIHA)

Date: 13/05/2025

1. IMPACT CHAINS

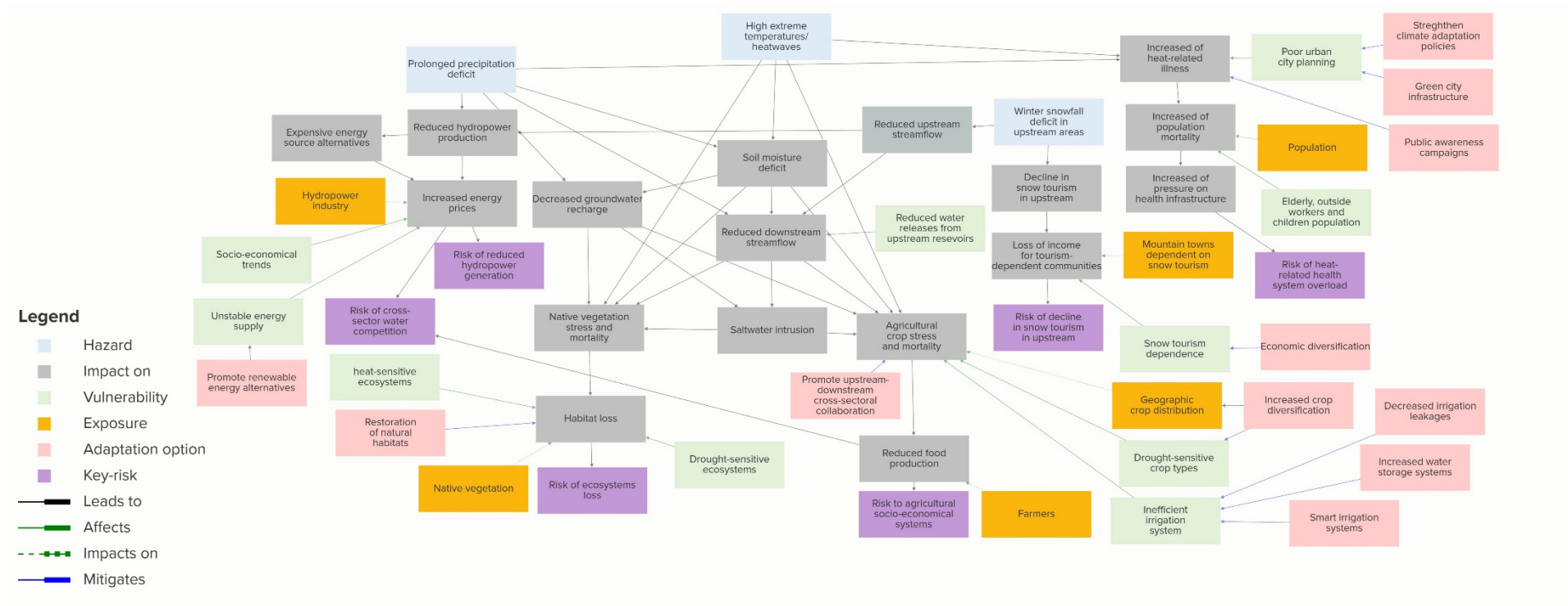


Figure 1: General impact chain connecting upstream and downstream conditions in the Adige River Basin.

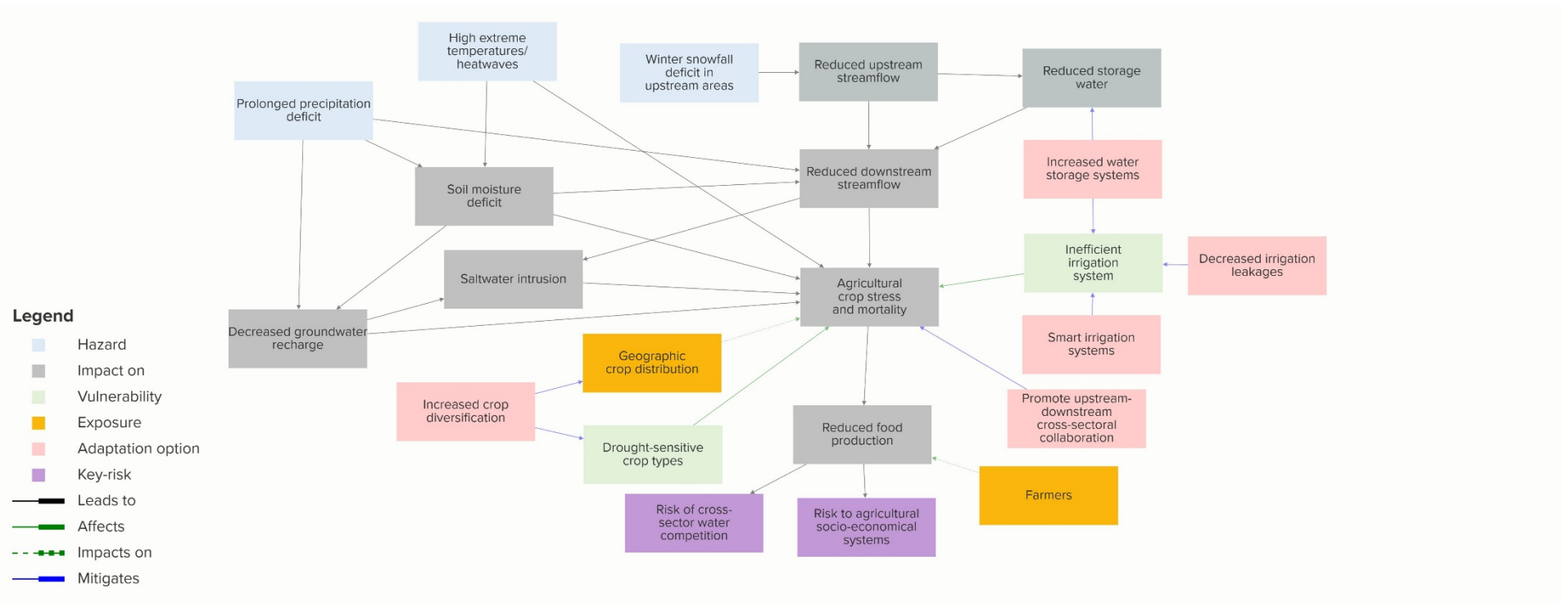


Figure 2: Specific impact chain for the agriculture sector.

2. DATA SOURCES

Risk component	Category	Title	Date	Temporal Resolution	Spatial Resolution	Spatial Coverage	Data Provider	Data Type	Data Source
Hazards	Climate	ERA5 Land Reanalysis	1950-present	hourly	0.1° (~ 11 km)	Global	Copernicus	Reanalysis	CDS Copernicus
		E-OBS gridded observations	1950-present	daily	0.1° (~ 11 km)	Europe	Copernicus	EO/in situ	CDS Copernicus
	Hydrology	River Discharge	1984-2023	variable	Station-based	Region	Regional or provincial administration	In situ	Bolzano province
			variable	15 minutes	Station-based				Trento Province
			01/2010-present (1 week delay)	hourly or daily	Station-based				Veneto region
	Glacier	Glacier outlines	1997, 2005, 2017	static	-	Region	University of Innsbruck, Autonomous Province of Bolzano	EO	https://zenodo.org/records/7615565
	Soil moisture	Soil Moisture	1978-2022	daily	0.25°	Global	ESA	EO	Soil Moisture Climate Change Initiative
	Ground-water	Groundwater Resources maps of Europe	1982	static	1:500,000	Europe	JRC	Vector	JRC groundwater map of Europe
Exposure	Land Cover	Dynamic World V1	2015-present	daily	10 m	Global	Google and World Resources Institute	EO	Dynamic World Dataset
		ESA Landcover	2020-2021	annual	10 m	Global	ESA	EO	https://esa-worldcover.org/
		CORINE Land Cover	1990-2018	6 years	100 m	Europe	Copernicus	EO	CORINE Land Cover
	Hydro-graphy	HydroSheds	2014	static	15 arc-seconds (~500 m)	Global	WWF	Vector	https://www.hydrosheds.org/products/hydrobasins
		Watersheds	2005	static	1:250,000	Region	ARPA Veneto	Vector	Sigma portal
	Soil	Soil type	2017	static	250 m	Global	ISRIC	Raster	https://www.isric.org/explore/soilgrids
	Agriculture	Cultivated area and production	2006-present	annual	Provinces	National (Italy)	ISTAT	Survey data	ISTAT
		Rainfed and Irrigated-Cropland	2015/2020	annual	30 m	Global	USGS	EO	LGRIP30
		Crop and irrigation maps	2021	annual/seasonal	10 m	Global	ESA	EO	WorldCereal
Vulnerability	Irrigation	Global Map of Irrigation Areas	Around 2005	Static	5 arc-min (~ 10 km)	Global	FAO, University of Bonn	Raster	Global Map of Irrigation Area
		Historical Irrigation Dataset	1900-2005	10-years, 5-years	5 arc-min (~ 10 km)	Global	University of Aalto, Bonn, British Columbia, Frankfurt, Texas	Raster	Historical Irrigation Dataset
		MIRCA2000 – Global Monthly Irrigated and Rainfed Crop Areas	Around 2000	Static	5 arc-min (~ 10 km)	Global	FAO, Goethe University Frankfurt	Raster	MIRCA
Exposure and vulnerability	Agriculture	Global Agro-Ecological Zones	1999-2001; 2009–2011	3 year averages	5 arc-min (~ 10 km)	Global	FAO	EO	Global Agro-Ecological Zones

		Global Yield Cap Atlas	Depending on the country	Yearly	Country level	Global	University of Wageningen and Nebraska-Lincoln	EO	Global Yield Cap Atlas
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