**Linking Indicators of Drought to Multi-Sectoral Impacts: an Application to California**

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1. **Objective**

This repository serves to fulfill the commitments of the grant by compiling the deliverables developed during the project.

The expected outputs of the project were:

* *A framework to develop multi-sectoral drought hazard indicators.*
* *An innovative methodology for linking drought hazard indicators and impacts.*
* *Open access data and methods for drought hazard indicators and impacts.*
* *Exploratory mapping tools, including sector-specific drought hazard indicator maps and drought risk profiles.*
* *An engagement process that could be useful for ongoing tracking of drought impacts.*

This repository contains the methods, code and data related to all the outputs except for the engagement process, which is included as a separated document.

1. **Contents**

*A framework to develop multi-sectoral drought hazard indicators, taking into account the water grid*. This framework will be tested for California, but it could be useful for refining drought hazard indicators in other highly managed water systems, such as those of the American West.

*An innovative methodology for linking drought hazard indicators and impacts.* The framework that we are proposing to assess the risk of drought impacts—linking hydro-meteorological hazards with measures of system exposure and vulnerability—has been developed at the conceptual level, but few actual applications exist on the ground. This methodology could be applied by NIDIS in California and other places, as well as by other agencies.

*Open access data and methods for drought hazard indicators and impacts.* This includes the method for representing the water grid in sector-specific drought hazard indicators, data used to accomplish this, and a process for updating the indicators with readily available data, as well as methods and data for other components of drought impact risks.

*Exploratory mapping tools, including sector-specific drought hazard indicator maps and drought risk profiles*. We propose to provide maps of drought hazard indicators that account for water supply portfolios for four water-related sectors (urban, rural communities, irrigated agriculture, and freshwater ecosystems) in California. We also propose to explore the combination of these maps with other sectoral variables (exposure and vulnerability) that can result in drought impact risk profiles.

*An engagement process that could be useful for ongoing tracking of drought impacts.* We propose to develop the project with a high-level of engagement with relevant stakeholders. The goal is twofold: first to gather feedback from the most relevant potential developers and users of the products that we would provide, but also for helping promote an engagement process that would potentially continue after the end of the project.

1. **Linking Indicators of Drought to Multi-Sectoral Impacts: an Application to California**