Sharing Data And Information on Local Flooding Risk in Niger

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SHARING DATA AND INFORMATION ON LOCAL FLOODING RISK IN NIGER

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RATIONALE

Relevant data on hydroclimatic risks in LDCs (Least Developed Countries) are collected by intergovernmental and non-governmental organizations, university institutes, research organizations, projects and programs funded by national and international institutions. Though, these data are frequently not shared in an interoperable way for further usage. Emerging climate services, offered by global and national meteorological organizations, are implemented to provide stakeholders and political authorities with useful and reliable information to support the decision-making process and develop strategies for flooding risk management. The development of climate services, tailored to the local decision-making context, can improve the usability and usefulness of information derived from hydrometeorological forecasts and hydrological models. Local flood risk areas mapping is essential information for a wide number of applications, ranging from engineering to climate change studies, and is crucial for planning effective emergency responses.

STUDY AREA

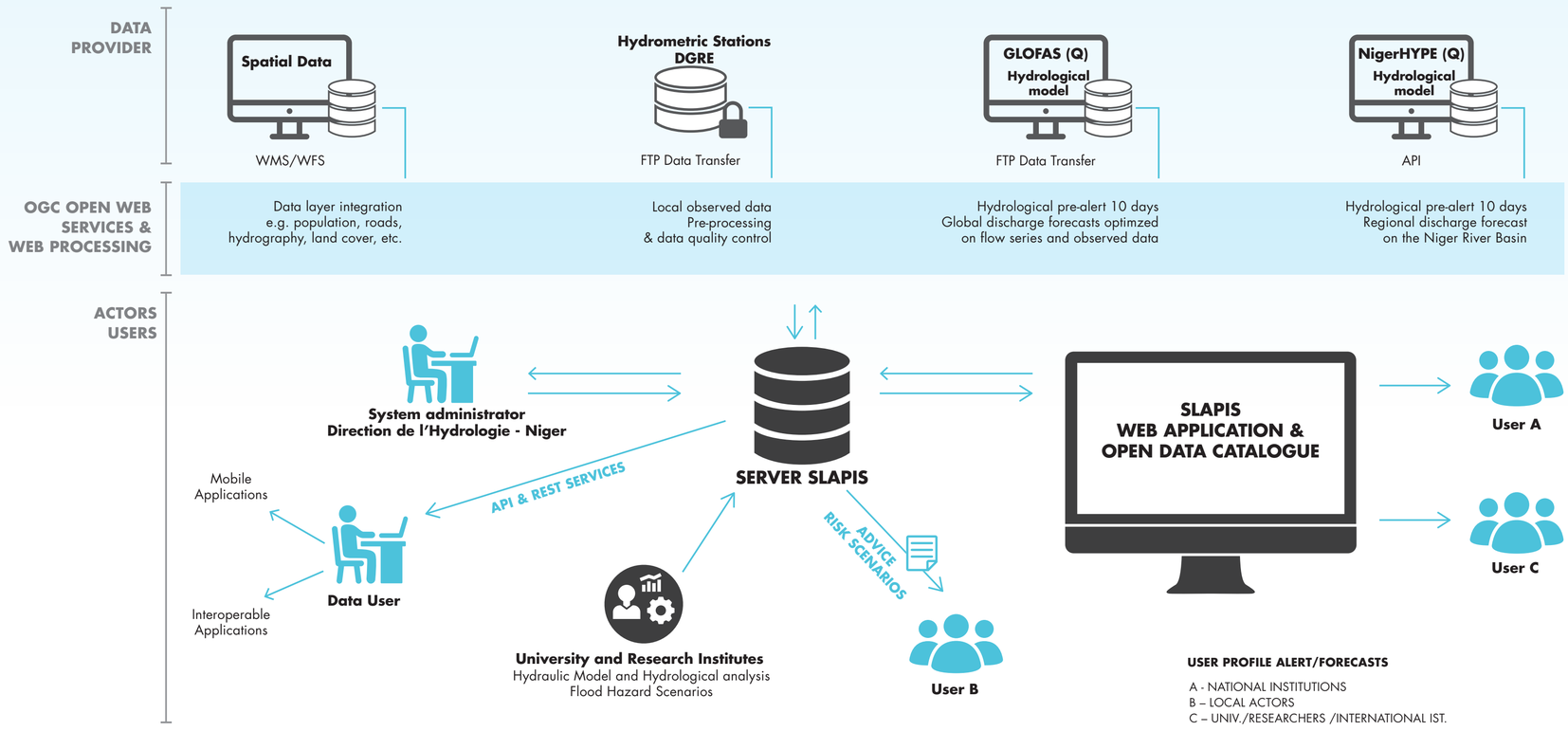
In this contest, we present the SLAPIS (Système Local d'Alerte Précoce pour les Inondations de la Sirba) web application, developed in the framework of ANADIA 2.0 cooperation project (funded by Italian Agency for Development Cooperation) for the implementation of an early warning system, aiming to better tailor hydroclimatic information to the user's needs, both in terms of content and format. To improve the effectiveness of the system, stakeholders have been labeled, from local communities to national decision-makers, according to their requirements.

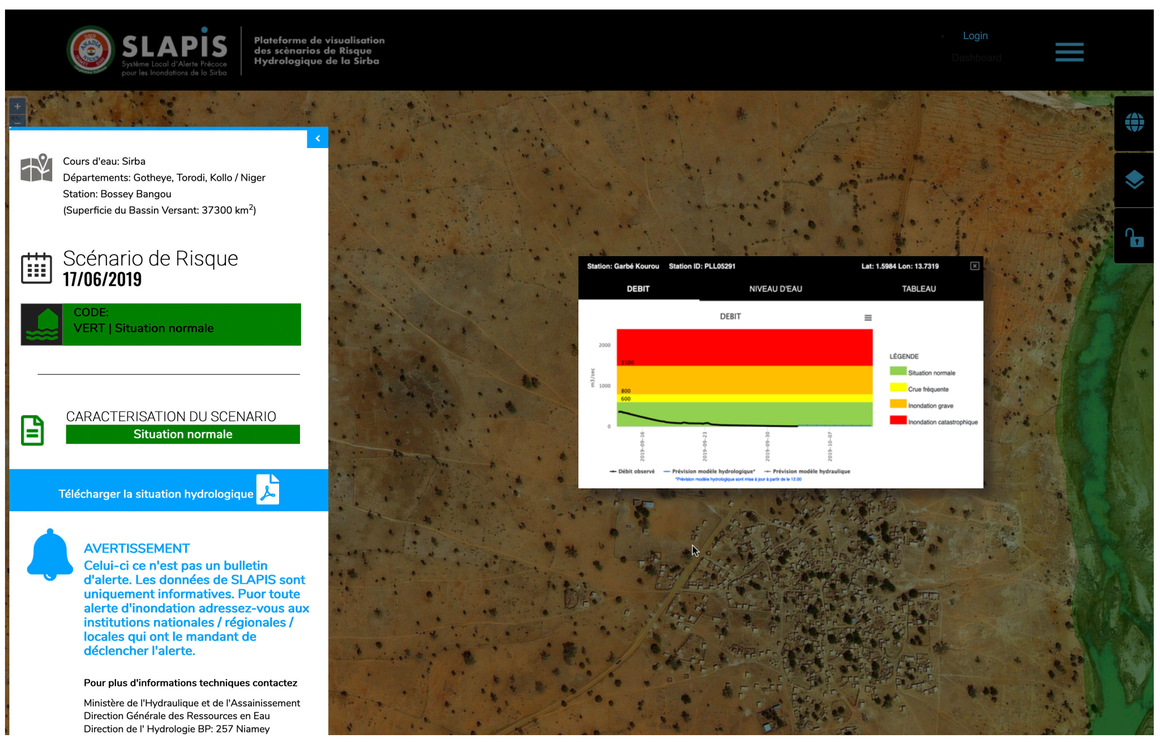
The study was carried out in the Middle Niger River Basin, focusing on one of its main tributaries, the Sirba River.

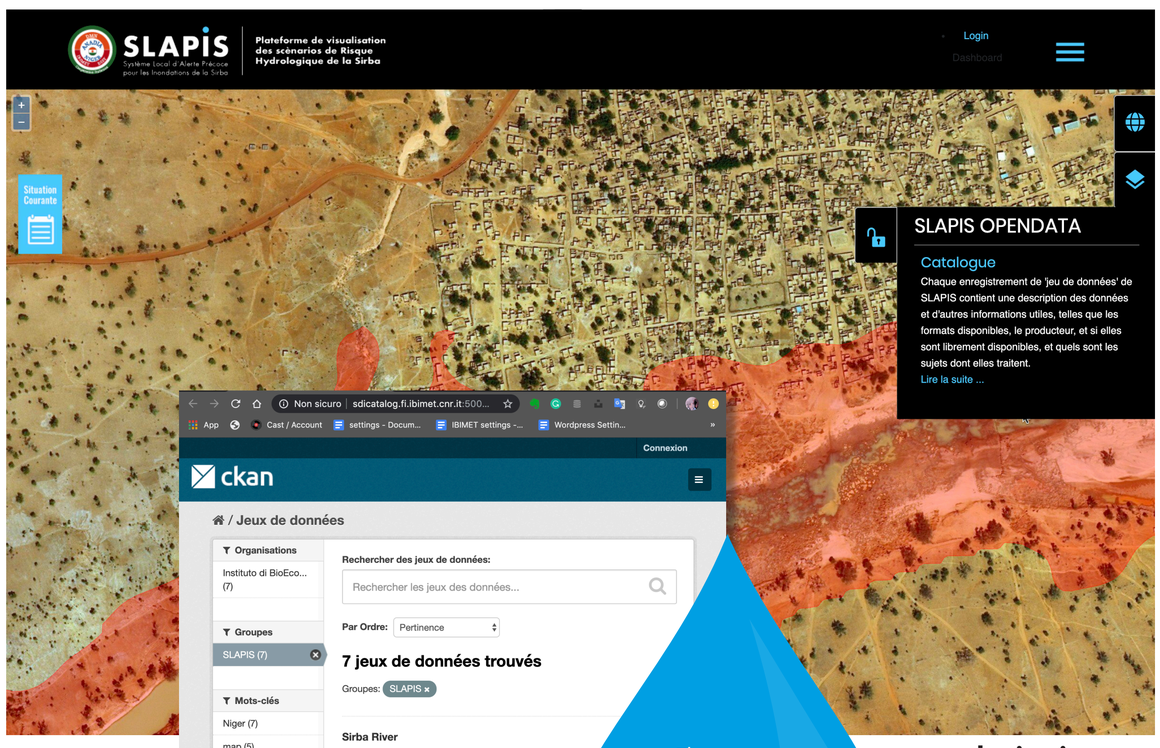
DATA INFRASTRUCTURE

From the point of view of Geomatics and Information Communication Technologies (ICT), the activities concerned the conceptual and formal data model design, the development of a Spatial Data Infrastructure (SDI), a client-server architecture and users' interface, the implementation of standard OWSs (Open Web Services), a Web application and procedures for data flow management from several hydroclimatic data providers.

Specific REST Web Services, using JAX-RS technologies, were implemented to allow the communication with other interoperable distributed platforms so enhance the dissemination of the local data. This last task is particularly oriented to the community of experts and researchers who will benefit from this way of data in a standard format exploitable for further analysis.







RESULTS AND CONCLUSIONS

An operational test during the current raining season, conducted with the assistance of the Directorate for Hydrology of Niger, is underway to determine the accuracy and improve the reliability of the system. The choice of interoperable web services approach allows sharing data and information with other platforms or client software as well as the development of tools for the dissemination of information through ICT applications. In this way it will be possible to provide specific advice for end-users at different decision-making levels, bridging the gap between available technology and local users' needs for adaptation, mitigation, and flooding risk management in the Sahel.

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