Objective-based planning of water resources and climate change integration in development policies

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Abstract

Water resources are one of the key systems by which climate change will indirectly affect economic and social development sectors. Significant climate change impacts on water resources will have limiting effects on development sectors. Taking these repercussions of climate change impacts on water resources into account in economic and social development planning and management is the main resilience response to implement. In practice, such a response will require relevant specific approaches, knowledge, information, solutions and decision support tools to achieve the desired resilience objectives. In this paper, we describe the Badolo ClimWaterProspect framework, a framework for designing and implementing climate change and water resources integration in development policies actions. It includes methodological tools, knowledge corpuses and a decision support matrix for an objective-based planning of water resources and climate change integration in development policies. The main results of this article are information, solutions and knowledge families, resilience objectives families and a decision support matrix for development sectors resilience to the repercussions of climate change impacts on resources water plans. Fundamentally, The Badolo ClimWaterProspect framework is an innovative, inclusive and participatory tool for significantly improving the relevance, efficiency, performance and impact of water resources and climate change integration in sectoral development policies actions.
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In this paper, we describe the Badolo ClimWaterProspect framework, a framework for designing and implementing climate change and water resources integration in development policies actions. It includes methodological tools, knowledge corpuses and a decision support matrix for an objective-based planning of water resources and climate change integration in development policies.
The main results of this article are information, solutions and knowledge families, resilience objectives families and a decision support matrix for development sectors resilience to the repercussions of climate change impacts on resources water plans.
Fundamentally, The Badolo ClimWaterProspect framework is an innovative, inclusive and participatory tool for significantly improving the relevance, efficiency, performance and impact of water resources and climate change integration in sectoral development policies actions.

Keywords: Water resources, climate change, development sectors, resilience, integration, scientific framework, ClimWaterProspect
1. Introduction
Water resources are one of the most important systems by which climate change will indirectly affect economic and social development sectors [1-10]. Significant impacts of climate change on water resources availability, quality, demand, financing and governance could affect economic sectors, basic social services, natural resources, infrastructure and political governance [11-15]. These repercussions of climate change impacts on water resources, which could be strong constraints for economic and social development, would accentuate social inequalities and population migration in several regions of the world. Taking these repercussions into account in economic and social development planning and management is the main resilience response to implement [16-23]. This response will require, in practice, specific knowledge, information, solutions and decision support tools to be efficient and have the desired resilience result [24-30]. The contextual impacts of climate change on water resources, the repercussions of these impacts for development sectors, the risks of accentuating social inequalities and population migration are the main knowledge to be developed for resilience to the repercussions of climate change impacts on water resources. The decision support tool required is a scheme for integration pathways that achieve development sectors planned resilience progress.
In this paper, we describe the Badolo ClimWaterProspect framework, a framework for designing and implementing climate change and water resources integration in development policies actions. It includes methodological tools and a decision support scheme. In practice, The Badolo ClimWaterProspect suggests a sequential integration of climate change impacts on water resources repercussions in sectoral development plans. Each integration sequence achieves a planned resilience objective. Fundamentally, the Badolo ClimWaterProspect framework is an innovative, inclusive and participatory tool for significantly improving the relevance, efficiency, performance and impact of water resources and climate change integration in sectoral development policies actions.

2. Methodology
Figure 1 shows the Badolo ClimWaterProspect framework methodological tools, bodies of knowledge and decision support tool. These are mainly the impacts of climate change on water resources, the repercussions of the impacts of climate change on water resources, vulnerability factors, resilience solutions, solutions for gender and social inclusion integration, conflict and population migration risks, resilience objectives and an integration of water resources and climate change in development policies planning matrix.

![Figure 1. Elements of ClimWaterProspect framework](image)

The Badolo ClimWaterProspect framework methodological tools are:
- ClimImpacts for climate change direct and indirect impacts assessment;
- ClimVulnerabilities for climate change vulnerability factors assessment;
- ClimSolutions for climate change resilience solutions identification;
- ClimGender for gender and social inclusion integration;
- ClimMigration for climate migration integration;
- ClimConflicts for conflicts risks integration;
ClimImpacts, ClimVulnerabilities and ClimSolutions methodological tools are related to Climprospect methodological tool [31].

For a multidimensional approach to climate change resilience, the Badolo ClimWaterProspect framework associates water resources and socio-economic development with specific vectors. The components of the vector w (w1, w2, w3, w4, w5) associated with water resources are:

- w1 = water resources availability
- w2 = water resource demands
- w3 = water resources quality
- w4 = water resources financing
- w5 = water resources governance

The components of the vector e (e1, e2, e3, e4, e5) associated with socio-economic development are:

- e1 = economic sectors
- e2 = basic social sectors
- e3 = natural resources
- e4 = infrastructure
- e5 = political governance

3. Results

3.1. Climate change impact chains on water resources

The climate change impact chains cw1, cw2, cw3, cw4 and cw5 for water resource components w1, w2, w3, w4 and w5 are the families of information on which the Badolo ClimWaterProspect framework is based. They are:

- cw1 = cw1d0, cw1d1, cw1d2, cw1d3, cw1d4, cw1d5
- cw2 = cw2d0, cw2d1, cw2d2, cw2d3, cw2d4, cw2d5
- cw3 = cw3d0, cw3d1, cw3d2, cw3d3, cw3d4, cw3d5
- cw4 = cw4d0, cw4d1, cw4d2, cw4d3, cw4d4, cw4d5
- cw5 = cw5d0, cw5d1, cw5d2, cw5d3, cw5d4, cw5d5

Impact chains with five indirect impacts are considered in this article. Depending on the context, the length of the impact chains could be adjusted. An impact cwid0(i = 1, ..., 5) is a climate change direct impact. An impact cwidj (i = 1, ..., 5; j =1, ..., 5) is an indirect impact of order (j).

3.2. Climate change impacts on water resources repercussions

The families cwe1, cwe2, cwe3, cwe4 and cwe5 are the families of climate change impacts on water resources repercussions for the development sectors e1, e2, e3, e4 and e5:

- cwe1 = cwe1e1, cwe1e2, cwe1e3, cwe1e4, cwe1e5
- cwe2 = cwe2e1, cwe2e2, cwe2e3, cwe2e4, cwe2e5
- cwe3 = cwe3e1, cwe3e2, cwe3e3, cwe3e4, cwe3e5
- cwe4 = cwe4e1, cwe4e2, cwe4e3, cwe4e4, cwe4e5
- cwe5 = cwe5e1, cwe5e2, cwe5e3, cwe5e4, cwe5e5

An element cwiej (i = 1, ..., 5; j = 1, ..., 5) is the repercussion of the impacts chain cwi on the development component ej (j = 1, ..., 5). In a given context, the identification of the repercussions of climate change impacts should be considered through inclusive and participatory processes. These repercussions could be economic, social, human, environmental, institutional or political limitations.
### 3.3. Vulnerabilities to climate change impacts on water resources repercussions

The families $vcw1$, $vcw2$, $vcw3$, $vcw4$ and $vcw5$ are vulnerability factors families of the development sectors $e1$, $e2$, $e3$, $e4$ and $e5$ to the repercussions of climate change impacts of on water resources. They are formally:

- $vcw1 = vcw1e1, vcw2e1, vcw3e1, vcw4e1, vcw5e1$
- $vcw2 = vcw1e2, vcw2e2, vcw3e2, vcw4e2, vcw5e2$
- $vcw3 = vcw1e3, vcw2e3, vcw3e3, vcw4e3, vcw5e3$
- $vcw4 = vcw1e4, vcw2e4, vcw3e4, vcw4e4, vcw5e4$
- $vcw5 = vcw1e5, vcw2e5, vcw3e5, vcw4e5, vcw5e5$

An element $vcwij (i = 1, ..., 5; j = 1, ..., 5)$ is the vulnerability factors subgroup of the development sector $(ej)$ to the repercussions family $cwij (i = 1, ..., 5)$. These vulnerability factors, depending on the context considered, could be economic, social, environmental, human, scientific, technological, institutional or political factors.

### 3.4. Resilience to climate change impacts on water resources repercussions

The families $zcw1$, $zcw2$, $zcw3$, $zcw4$ and $zcw5$ are the families of resilience solutions of the development sectors $e1$, $e2$, $e3$, $e4$ and $e5$ to the repercussions of climate change impacts on water resources:

- $zcw1 = zcw1e1, zcw2e1, zcw3e1, zcw4e1, zcw5e1$
- $zcw2 = zcw1e2, zcw2e2, zcw3e2, zcw4e2, zcw5e2$
- $zcw3 = zcw1e3, zcw2e3, zcw3e3, zcw4e3, zcw5e3$
- $zcw4 = zcw1e4, zcw2e4, zcw3e4, zcw4e4, zcw5e4$
- $zcw5 = zcw1e5, zcw2e5, zcw3e5, zcw4e5, zcw5e5$

An element $zcwij (i = 1, ..., 5; j = 1, ..., 5)$ is the resilience solutions subgroup of the development sector $(ej)$ to the repercussions family $cwei (i = 1, ..., 5)$. These resilience solutions could be economic, social, environmental, human, scientific, technological, institutional or political solutions.

### 3.5. Information families for gender mainstreaming and social inclusion

The Badolo ClimWaterProspect framework considers five specific social groups for gender and social inclusion integration. They are specified by figure 2.

<table>
<thead>
<tr>
<th>Social groups for gender and social inclusion integration</th>
<th>( \tilde{g}1 ), the social group specifically concerned by the $cwe1$ family of repercussions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \tilde{g}2 ), the social group specifically affected by the $cwe2$ family of repercussions</td>
</tr>
<tr>
<td></td>
<td>( \tilde{g}3 ), the social group specifically affected by the $cwe3$ family of repercussions</td>
</tr>
<tr>
<td></td>
<td>( \tilde{g}4 ), the social group specifically affected by the $cwe4$ family of repercussions</td>
</tr>
<tr>
<td></td>
<td>( \tilde{g}5 ), the social group specifically affected by the $cwe5$ family of repercussions</td>
</tr>
</tbody>
</table>

Figure 2. Social groups of the ClimWaterProspect framework for gender and social inclusion integration
The families of specific repercussions $d_1, d_2, d_3, d_4, d_5$ are the families of repercussions for the integration of gender and social inclusion in development sectors resilience to the repercussions of the impacts of climate change on water resources:

- $d_1 = \{g_1(cw1e1), g_1(cw2e1), g_1(cw3e1), g_1(cw4e1), g_1(cw5e1)\}$
- $d_2 = \{g_2(cw1e2), g_2(cw2e2), g_2(cw3e2), g_2(cw4e2), g_2(cw5e2)\}$
- $d_3 = \{g_3(cw1e3), g_3(cw2e3), g_3(cw3e3), g_3(cw4e3), g_3(cw5e3)\}$
- $d_4 = \{g_4(cw1e4), g_4(cw2e4), g_4(cw3e4), g_4(cw4e4), g_4(cw5e4)\}$
- $d_5 = \{g_5(cw1e5), g_5(cw2e5), g_5(cw3e5), g_5(cw4e5), g_5(cw5e5)\}$

An element $g_{ij}(cwiej)$ is the specific repercussion of the climate change impacts chain $cw_i$ ($i = 1, \ldots, 5$) for the social group $g_j$ ($j = 1, \ldots, 5$)

The families $v_1, v_2, v_3, v_4, v_5$ are the social groups $g_1, g_2, g_3, g_4, g_5$ specific vulnerability factors families to climate change impacts on water resources repercussions:

- $v_1 = \{v_1(cw1e1), v_1(cw2e1), v_1(cw3e1), v_1(cw4e1), v_1(cw5e1)\}$
- $v_2 = \{v_2(cw1e2), v_2(cw2e2), v_2(cw3e2), v_2(cw4e2), v_2(cw5e2)\}$
- $v_3 = \{v_3(cw1e3), v_3(cw2e3), v_3(cw3e3), v_3(cw4e3), v_3(cw5e3)\}$
- $v_4 = \{v_4(cw1e4), v_4(cw2e4), v_4(cw3e4), v_4(cw4e4), v_4(cw5e4)\}$
- $v_5 = \{v_5(cw1e5), v_5(cw2e5), v_5(cw3e5), v_5(cw4e5), v_5(cw5e5)\}$

An element $v_{ij}(cwiej)$, ($i = 1, \ldots, 5; j = 1, \ldots, 5$) is the subgroup of specific vulnerability factors of the social group $g_i$ to the family of repercussions $cw_j$ ($i = 1, \ldots, 5$).

The families of solutions $z_1, z_2, z_3, z_4, z_5$ are social groups $g_1, g_2, g_3, g_4, g_5$ resilience solutions families for gender and social inclusion integration. They are formally

- $z_1 = \{z_1(cw1e1), z_1(cw2e1), z_1(cw3e1), z_1(cw4e1), z_1(cw5e1)\}$
- $z_2 = \{z_2(cw1e2), z_2(cw2e2), z_2(cw3e2), z_2(cw4e2), z_2(cw5e2)\}$
- $z_3 = \{z_3(cw1e3), z_3(cw2e3), z_3(cw3e3), z_3(cw4e3), z_3(cw5e3)\}$
- $z_4 = \{z_4(cw1e4), z_4(cw2e4), z_4(cw3e4), z_4(cw4e4), z_4(cw5e4)\}$
- $z_5 = \{z_5(cw1e5), z_5(cw2e5), z_5(cw3e5), z_5(cw4e5), z_5(cw5e5)\}$

An element $z_{ij}(cwiej)$, ($i = 1, \ldots, 5; j = 1, \ldots, 5$) is the subgroup of specific resilience solutions of the social group $g_i$ to the repercussion’s family $cw_j$ ($i = 1, \ldots, 5$).

### 3.6. Information families for conflicts risks integration

The families $k_1, k_2, k_3, k_4$ and $k_5$ are the families of conflict risks linked to the repercussions of the impacts of climate change on water resources. They are formally:

- $k_1 = \{k_1(cw1e1), k_1(cw2e1), k_1(cw3e1), k_1(cw4e1), k_1(cw5e1)\}$
- $k_2 = \{k_2(cw1e2), k_2(cw2e2), k_2(cw3e2), k_2(cw4e2), k_2(cw5e2)\}$
- $k_3 = \{k_3(cw1e3), k_3(cw2e3), k_3(cw3e3), k_3(cw4e3), k_3(cw5e3)\}$
- $k_4 = \{k_4(cw1e4), k_4(cw2e4), k_4(cw3e4), k_4(cw4e4), k_4(cw5e4)\}$
- $k_5 = \{k_5(cw1e5), k_5(cw2e5), k_5(cw3e5), k_5(cw4e5), k_5(cw5e5)\}$

An element $k_{ij}(cwiej)$ is the main conflict linked to the repercussion $cw_{ij}$ ($j = 1, 1, \ldots, 5$) of the impacts of climate change on water resources.
The vkr1, vkr2, vkr3, vkr4 and vkr5 families are the families of contextual vulnerability factors to the risks of conflicts linked to the repercussions of the impacts of climate change on water resources. They are formally:

- vkr1, family of contextual vulnerability factors to the kr1 family of conflict risks
- vkr2, family of contextual vulnerability factors to the kr2 family of conflict risks
- vkr3, family of contextual vulnerability factors to the kr3 family of conflict risks
- vkr4, family of contextual vulnerability factors to the kr4 family of conflict risks
- vkr5, family of contextual vulnerability factors to the kr5 family of conflict risks

The zkr1, zkr2, zkr3, zkr4 and zkr5 families are the families of contextual resilience solutions to the risks of conflicts linked to the repercussions of the impacts of climate change on water resources. They are formally:

- zkr1, family of contextual resilience solutions to the kr1 family of conflict risks
- zkr2, family of contextual resilience solutions to the kr2 family of conflict risks
- zkr3, family of contextual resilience solutions to the kr3 conflict risk family
- zkr4, family of contextual resilience solutions to the kr4 conflict risk family
- zkr5, family of contextual resilience solutions to the kr5 conflict risk family

3.7. Information families for population migration integration

The families kr1, kr2, kr3, kr4 and kr5 are the families of population migration risks linked to the repercussions on water resources. They are formally:

- kr1 = mr1(cw1e1), mr1(cw2e1), mr1(cw3e1), mr1(cw4e1), mr1(cw5e1)
- kr2 = mr2(cw1e2), mr2(cw2e2), mr2(cw3e2), mr2(cw4e2), mr2(cw5e2)
- kr3 = mr3(cw1e3), mr3(cw2e3), mr3(cw3e3), mr3(cw4e3), mr3(cw5e3)
- kr4 = mr4(cw1e4), mr4(cw2e4), mr4(cw3e4), mr4(cw4e4), mr4(cw5e4)
- kr5 = mr5(cw1e5), mr5(cw2e5), mr5(cw3e5), mr5(cw4e5), mr5(cw5e5)

An element mri(cwjei) is the main risk of population migration linked to the repercussion cwjei (j = 1, 1, ..., 5) of the impacts of changes climate on water resources.

The families vmr1, vmr2, vkr3, vmr4 and vmr5 are the families of contextual vulnerability factors to population migration risks linked to the repercussions of the impacts of climate change on water resources. They are formally:

- vmr1, family of contextual vulnerability factors to the risks under mr1
- vmr2, family of contextual vulnerability factors to the risks under mr2
- vmr3, family of contextual vulnerability factors to the risks under mr3
- vmr4, family of contextual vulnerability factors to the risks under mr4
- vmr5, family of contextual vulnerability factors to the risks under mr5

The families zmr1, zmr2, zmr3, zmr4 and zmr5 are the families of contextual resilience solutions to the risks of population migration linked to the repercussions of the impacts of climate change on water resources:

- zmr1, family of contextual resilience solutions to the risks under mr1
- zmr2, family of contextual resilience solutions to the risks under mr2
- zmr3, family of contextual resilience solutions to the risks under mr3
- zmr4, family of contextual resilience solutions to the risk under mr4
- zmr5, family of contextual resilience solutions to the risks under mr5
Figure 3 indicates the resilience objectives of climate change impacts on water resources repercussions integration actions:

For the short term:
- $\mathcal{T}1\text{Cwe}$, is the family of repercussions of the impacts of climate change to mitigate;
- $\mathcal{T}1\text{vcwe}$, is the family of vulnerability factors to reduce;
- $\mathcal{T}1\text{zcwe}$, is the family of resilience solutions to implement;
- $\mathcal{T}1\text{d}g$, is the family of specific repercussions of climate change impacts to mitigate;
- $\mathcal{T}1\text{v}g$, is the family of specific vulnerabilities to reduce;
- $\mathcal{T}1\text{z}g$, is the family of specific resilience solutions to implement;
- $\mathcal{T}1\text{k}r$, is the family conflict risks to reduce;
- $\mathcal{T}1\text{vk}$, is the family of vulnerabilities to conflict risks to reduce;
- $\mathcal{T}1\text{zk}$, is the family of conflict risks prevention solutions to implement;
- $\mathcal{T}1\text{mr}$, is the family of population migration risks to reduce;
- $\mathcal{T}1\text{vmr}$, is the family of contextual vulnerability to migration risks to reduce;
- $\mathcal{T}1\text{zmr}$, is the family of migration risks prevention solutions to implement

Table 1 shows the matrix for planning integration of climate change and water resources in development policies in line with resilience objectives.

<table>
<thead>
<tr>
<th>Integration horizons</th>
<th>Resilience configurations</th>
<th>Integrating of climate change and water resources resilience objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short term</td>
<td>$\mathcal{e}1$</td>
<td>$\mathcal{T}1\text{Cwe}; \mathcal{T}1\text{vcwe}; \mathcal{T}1\text{zcwe}; \mathcal{T}1\text{d}g; \mathcal{T}1\text{v}g; \mathcal{T}1\text{z}g; \mathcal{T}1\text{k}r; \mathcal{T}1\text{vk}; \mathcal{T}1\text{zk}; \mathcal{T}1\text{mr}; \mathcal{T}1\text{vmr}; \mathcal{T}1\text{zmr}$</td>
</tr>
<tr>
<td>Medium term</td>
<td>$\mathcal{e}2$</td>
<td>$\mathcal{T}2\text{Cwe}; \mathcal{T}2\text{vcwe}; \mathcal{T}2\text{zcwe}; \mathcal{T}2\text{d}g; \mathcal{T}2\text{v}g; \mathcal{T}2\text{z}g; \mathcal{T}2\text{k}r; \mathcal{T}2\text{vk}; \mathcal{T}2\text{zk}; \mathcal{T}2\text{mr}; \mathcal{T}2\text{vmr}; \mathcal{T}2\text{zmr}$</td>
</tr>
<tr>
<td>Long term</td>
<td>$\mathcal{e}3$</td>
<td>$\mathcal{T}3\text{Cwe}; \mathcal{T}3\text{vcwe}; \mathcal{T}3\text{zcwe}; \mathcal{T}3\text{d}g; \mathcal{T}3\text{v}g; \mathcal{T}3\text{z}g; \mathcal{T}3\text{k}r; \mathcal{T}3\text{vk}; \mathcal{T}3\text{zk}; \mathcal{T}3\text{mr}; \mathcal{T}3\text{vmr}; \mathcal{T}3\text{zmr}$</td>
</tr>
</tbody>
</table>

The resilience configuration $\mathcal{e}1$ to the repercussions of climate change impacts on water resources is characterized by:
- $\mathcal{T}1\text{Cwe} \approx \emptyset$, repercussions are reduced to residual repercussions;
- $\mathcal{T}1\text{vcwe} \approx \emptyset$, vulnerability factors are reduced to residual vulnerability factors;
- $\mathcal{T}1\text{d}g \approx \emptyset$, specific repercussions are reduced to residual repercussions;
- $\mathcal{T}1\text{v}g \approx \emptyset$, specific vulnerability factors are reduced to residual factors;
- $\mathcal{T}1kr \approx \emptyset$, conflicts risks are reduced to residual risks;
- $\mathcal{T}1vkr \approx \emptyset$, contextual vulnerability factors to conflicts risks are reduced to residual factors;
- $\mathcal{T}1mr \approx \emptyset$, migration risks are reduced to residual risks;
- $\mathcal{T}1vmr \approx \emptyset$, vulnerability factors to migration risks are reduced to residual factors;

**Discussion**

Integration of water resources and climate change in development policies actions require relevant bodies of knowledge and decision support tools to have a significant impact. The Badolo ClimWaterProspect families of climate change impacts on water resources, climate change impacts repercussions, vulnerability factors, resilience solutions, solutions for gender and social inclusion, conflicts and population migrations risks, resilience objectives and decision support matrix are these required bodies of knowledge. The climate change impacts chains on water resources concern several dimensions of water resources and include climate change direct and indirect impacts. They are therefore relevant information for determining the repercussions of the impacts of climate change to be integrated in development policies. The families of repercussions of climate change impacts on water resources are the subsets of constraints linked to the impacts of climate change on water resources for development sectors. The families of vulnerability factors of development sectors to the impacts of climate change on water resources are the information that will underpin the efficiency of climate change and water resources integration actions.

The integration of gender and social inclusion is the option to build inclusive, just and equitable resilience configurations. The Badolo ClimWaterProspect framework includes families of social groups, families of specific repercussions of the impacts of climate change on water resources, specific vulnerabilities and resilience solutions for inclusive, just and equitable resilience configurations of development sectors to the repercussions of the impacts of changes climate on water resources.

The impacts of climate change on water resources could be, in several regions of the world, factors that accentuate conflicts for the control of water resources and population migration. The integration of conflict and population migration risks are therefore an essential component of resilience to the impacts of climate change on water resources.

In the scientific literature, studies on the impacts of climate change on water resources and the resulting constraints for development are reported [24 -30]. The Badolo ClimWaterProspect framework takes into account aspects of these studies. However, it is distinguished by its approach, methodological tools, bodies of knowledge and its decision-making support matrix to improve the efficiency and impact of climate change and water resources integration in development policies actions. Specifically, resilience actions to the repercussions of the impacts of climate change impacts on water resources resulting from The Badolo ClimWaterProspect are based on sequential resilience objectives.

Fundamentally, the Badolo ClimWaterProspect framework is an innovative, inclusive and participatory tool for significantly improving the relevance, efficiency, performance and impact of water resources and climate change integration in sectoral development policies actions.

**Conclusion**

The objective of this article was to describe the Badolo ClimWaterProspect framework, a framework for designing and implementing actions to integrate the repercussions of climate change impacts on water resources in development policies. It includes methodological tools, bodies of knowledge and a decision support matrix for inclusive and participatory integration actions.

The Badolo ClimWaterProspect suggests a sequential integration of threats linked to the impacts of climate change on water resources in sectoral development plans. Each integration sequence achieves a planned resilience objective.

The main results of this article are families of information, solutions and knowledge, families of resilience objectives and a decision support Matrix to design, plan, implement, monitor and evaluate inclusive and participatory development sectors resilience actions to the repercussions of climate change impacts on water resources.

Fundamentally, the Badolo ClimWaterProspect framework is an innovative, inclusive and participatory tool for significantly improving the relevance, efficiency, performance and impact of water resources and climate change integration in sectoral development policies actions.
Conflicts of interest
The author declares no financial or non-financial conflicts of interest

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