

# HOW TO ENHANCE INNOVATIONS FOR CLIMATE DISASTER RESILIENCE

## **BRIGAIID's Test and Implementation Framework (TIF) now available!**

While Europe generates world-class technological research and innovations, too few ideas mature to successful implementation. This has a clear commercial cost (in terms of income and skilled jobs) on top of the fact that those technologies could protect European citizens from climate-related disasters.

To counteract this, the BRIGAIID Test and Implementation Framework helps climate-related innovations reach the market by:

- Offering methods and tools that guide and support innovations towards technical and societal readiness;
- Offering test plans and facilities supporting innovations in becoming ready for full-scale implementation;
- Enhancing EU policies on climate adaptation, flood protection and drought management, through BRIGAIID's extended support activities.

## **The Problem:**

### **Too few climate adaptation innovations make it to full-scale implementation**

Even though the EU generates a third of all top scientific publications, Europe is home to only 26 "Unicorn start-ups" (start-ups valued at over \$1 billion)<sup>1</sup>. This means too few of the region's great ideas make it out of the lab to blossom into successful, scalable businesses – especially when compared to USA or China. This represents missed opportunities in terms of European jobs, income and competitiveness. Furthermore, these costs multiply when the innovative ideas left languishing in the lab could offer new, better ways to protect society from climate-related floods, fires, droughts, and extreme weather.

Climate-related disasters are already impacting Europe. In 2016 alone, they wreaked more than €20 billion of damage<sup>2</sup> – and these damages are forecast to increase as our climate continues to change. In response, the EU is pledging essential public investment to trigger breakthrough discoveries in the field of climate change, and to ensure their uptake and exploitation<sup>3</sup>. The EU-funded project BRIGAIID supports innovations that aim to reduce climate change impacts and increase community resilience to natural disasters. Through its Test and Implementation Framework, BRIGAIID is helping innovations to develop effectively and reach their potential for full scale applications by end-users.

## Our contribution:

### The Test and Implementation Framework (TIF)

The TIF is designed to provide innovators, investors and end-users with clear guidelines in assessing an innovation's technical effectiveness, societal acceptance, and socioeconomic and environmental impact.

For practical use of the TIF, a tool has been developed in the form of as a set of guided questions that systematically evaluate an innovation's performance. It also provides guidance and advice to help interpret the results from the assessment.

The TIF provides key performance indicators on the impacts to various sectors (see figure below). Also, the TIF provides guidance on the types of tests that can be used to advance the technological readiness to a more mature stage. The TIF has the advantage that it can be run early on - and then iteratively throughout the innovation development - helping innovators to avoid getting locked into designs that are less likely to appeal to investors and end users.

### Innovation design assessment

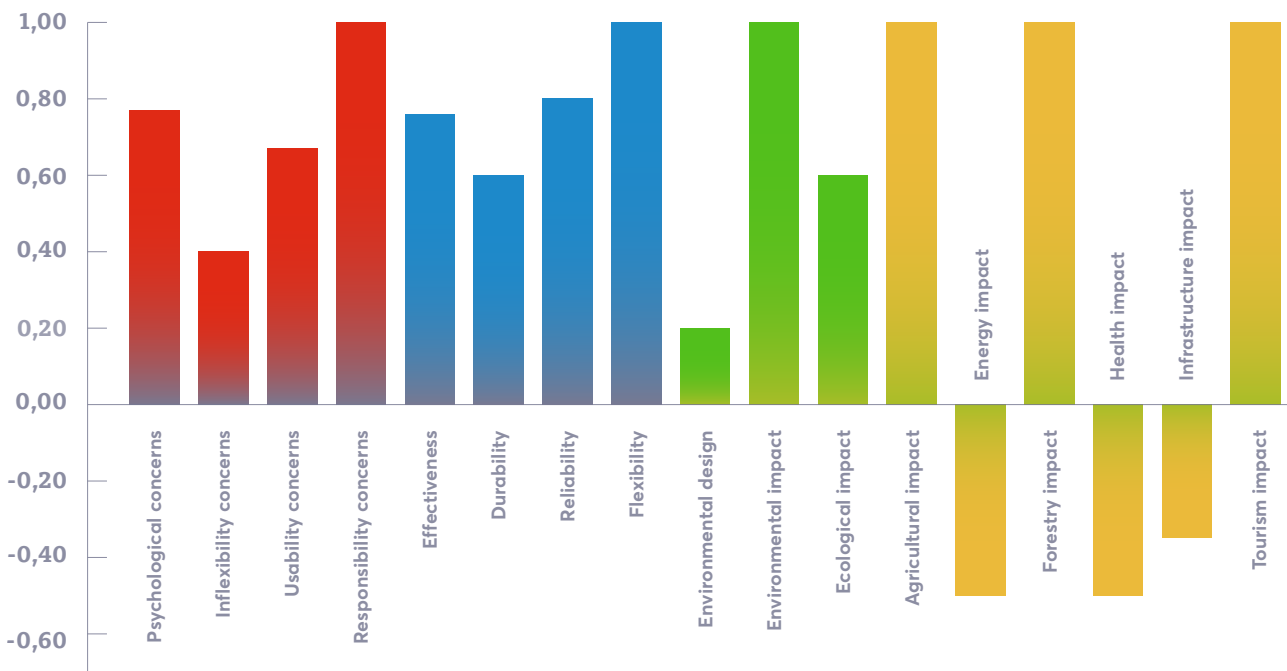


Figure 1: Example summary results of a TIF tool assessment. The colours indicate the different aspects.

- Social
- Technical
- Environmental
- Sectoral

## Supporting EU Policy

Beside the European innovation policy, the BRIGAIID Test and Implementation Framework helps the EU Commission achieve the following policy goals:

-  **Climate adaptation and disaster risk resilience:** in its 2018 review of the EU Adaptation Strategy, the EU Commission identified that more local adaptation action was needed to achieve a "more climate-resilient Europe"<sup>4</sup>. BRIGAIID has helped develop implementable climate adaptation innovations: testing them, supporting business development, readying them for financing, and linking them with end-users. By identifying EU regions most at risk to climate disasters and most able to adapt, BRIGAIID guides innovations to areas where they can best fight wildfires, avoid floods, and manage droughts or extreme weather – boosting local impact and business survival<sup>5</sup>.
  
-  **Flood protection and drought management:** In 79% of river basins in Europe, a lack of financing is an obstacle to flood and drought prevention – and this and other barriers mean the EU lacks adequate on-the-ground preparations. BRIGAIID supports innovative, cost-effective solutions to floods and droughts, such as [Tubebarrier](#) and [InfoSequia](#). BRIGAIID also supports regional implementation through its nine regional Communities of Innovation, which link innovators to end-users (including River Basin Authorities), enabling collaborative innovation development that serves real societal needs.

<sup>1</sup> European Commission (2018) [A renewed agenda for Research and Innovation: Europe's chance to shape its future](#)

<sup>2</sup> European Environmental Agency (2019) [Economic losses from climate-related extremes in Europe](#)

<sup>3</sup> European Commission (2018) [A renewed agenda for Research and Innovation - Europe's chance to shape its future](#)

<sup>4</sup> European Commission (2018) [Evaluation of the EU Strategy on Adaptation to Climate Change](#)

<sup>5</sup> BRIGAIID (2017) [Market Scoping Report](#)

<sup>6</sup> European Commission (2019) [European Overview - River Basin Management Plans](#)



**BRIGAIID**

BRIDGING THE GAP FOR INNOVATIONS  
IN DISASTER RESILIENCE

**Contact details:**

Roelof Moll:

[J.R.Moll@tudelft.nl](mailto:J.R.Moll@tudelft.nl)

[www.brigaid.eu](http://www.brigaid.eu)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 700699.