DAFNE: Use of a Decision-Analytic Framework to explore the water-energy-food NExus in complex and trans-boundary water resources systems of fast growing developing countries.

Fact Sheet

Project Information

DAFNE
Grant agreement ID: 690268

Project website

Status
Ongoing project

Start date
1 September 2016

End date
31 October 2020

Funded under
H2020-EU.3.5.4.

Overall budget
€ 5 420 222,68

EU contribution
€ 3 408 658,75

Coordinated by
EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH
Switzerland

This project is featured in...
Objective

Global trends in population growth and rising economic prosperity will increase the demand for energy, food and water, with more severe impact in fast-growing economies, such as in several African countries. The constraints on water, energy, and food could well hamper economic development, lead to social and geopolitical tensions, and cause lasting environmental damage. DAFNE advocates an integrated and adaptive water resources planning and management approach that explicitly addresses the water-energy-food (WEF) nexus from a novel participatory and multidisciplinary perspective. This includes social, economic, and ecologic dimensions, involves both public and private actors and is socially inclusive, enhances resource efficiency and prevents the loss of ecosystem services in regions where large infrastructures exist or are being built and intensive agriculture is expanding. A decision-analytic-framework (DAF) will be developed to quantitatively assess the social, economic, and environmental impact of expanding energy and food production in complex physical and political contexts, where natural and social processes are strongly interconnected and the institutional setting involves multiple stakeholders and decision-makers. The DAFNE approach will be demonstrated by analysing two cross-boundary case studies, the Zambezi and the Omo river basins. The WEF nexus will be quantified and analysed as the trade-off between conflicting objectives such as hydropower production vs irrigation, land exploitation vs conservation, etc. The nexus will be translated in economic values and impact on growth, ecosystems and ecosystem services. DAFNE will allow a better understanding of the WEF nexus, and generate and explore alternative planning and management solutions based on the cooperation of public and private stakeholders, which foster the profitable but equitable use of resources without transgressing environmental limits or creating societal and/or stakeholder conflicts.

Field of science

/social sciences/other social sciences/social sciences interdisciplinary/sustainable development
Programme(s)

Topic(s)

Call for proposal
H2020-WATER-2015-two-stage

Funding Scheme
RIA - Research and Innovation action

Coordinator

EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH

Address
Raemistrasse 101
8092 Zuerich

Switzerland

Activity type
Higher or Secondary Education Establishments

EU contribution
€ 0

Website
Contact the organisation

Participants (13)

POLITECNICO DI MILANO

Italy

EU contribution
€ 512 920

Address
Piazza Leonardo Da Vinci 32
20133 Milano

Activity type
Higher or Secondary Education Establishments

Website
Contact the organisation

INTERNATIONAL CENTER FOR RESEARCH ON THE ENVIRONMENT AND THE
INTERNATIONAL CENTER FOR RESEARCH ON THE ENVIRONMENT AND THE ECONOMY

Greece
EU contribution
€ 241 375

Address
22 Evdoxu Street
117 43 Athens

Contact the organisation

KATHOLIEKE UNIVERSITEIT LEUVEN

Belgium
EU contribution
€ 344 750

Address
Oude Markt 13
3000 Leuven

Website

Contact the organisation

THE UNIVERSITY COURT OF THE UNIVERSITY OF ABERDEEN

United Kingdom
EU contribution
€ 242 487,50

Address
King’s College Regent Walk
AB24 3FX Aberdeen

Website

Contact the organisation

UNIVERSITAET OSNABRUECK

Germany
EU contribution
€ 464 487,50

Address
Neuer Graben/schloss 29
49074 Osnabrueck

Website

Contact the organisation

INTERNATIONAL WATER MANAGEMENT INSTITUTE IWMI

Sri Lanka
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