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Supplement of

An interactive web-GIS tool for risk analysis: a case study in the Fella River basin, Italy

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Upload Hazard Map [?] [X]

Title: Layer title

Description: Layer description

Data: Browse for data archive... [Folder icon]

Options

Workspace: Default workspace [v]

Store: Default data store [v]

CRS: Coordinate Reference System ID

Properties of the uploaded hazard layer

Type: Type of hazard [v]

Return Period: Return Period

Alternative: Select an alternative [v]

[Folder icon] Upload [Refresh icon] Reset

Fig. S1. The import interface of the hazard component. The user can enter layer information such as name, description, hazard type, return period and the indication of whether the imported hazard map reflects the current situation or a possible future situation after the implementation of certain measures (for risk reduction module of the platform).

Define Vulnerability Curve [?] [X]

Curve Information:

Name:

Description:

Curve belongs to which types of:

Hazard: ▼

Elements-at-Risk: ▼

Vulnerability: ▼

Alternative: ▼

Curve Definition:

Input Option: ▼

Browse Data:

Fig. S2. The interface of the vulnerability component with “data ranges” option. The user can enter vulnerability curve information such as name, description, hazard type, elements-at-risk type, vulnerability type (e.g., physical) and the indication of whether the vulnerability curve corresponds to the current situation or a possible future situation after implementing certain measures.

Define Vulnerability Curve ? X

Curve Information:

Name:

Description:

Curve belongs to which types of:

Curve Definition:

Input Option:

Select Function:

Define parameter values..

+ Add - Delete

Classes	Parameter A	Parameter B	Parameter C
Concrete	0	1	0.6

Fig. S3. The interface of the vulnerability component with “CDF function” option. The user can enter basic vulnerability curve information as illustrated above, however, with the selection of input option as “function” instead of “data ranges”. In the prototype, CDF is implemented and the user can give parameter values to generate the respective vulnerability curve (e.g., for different classes of a certain elements-at-risk).

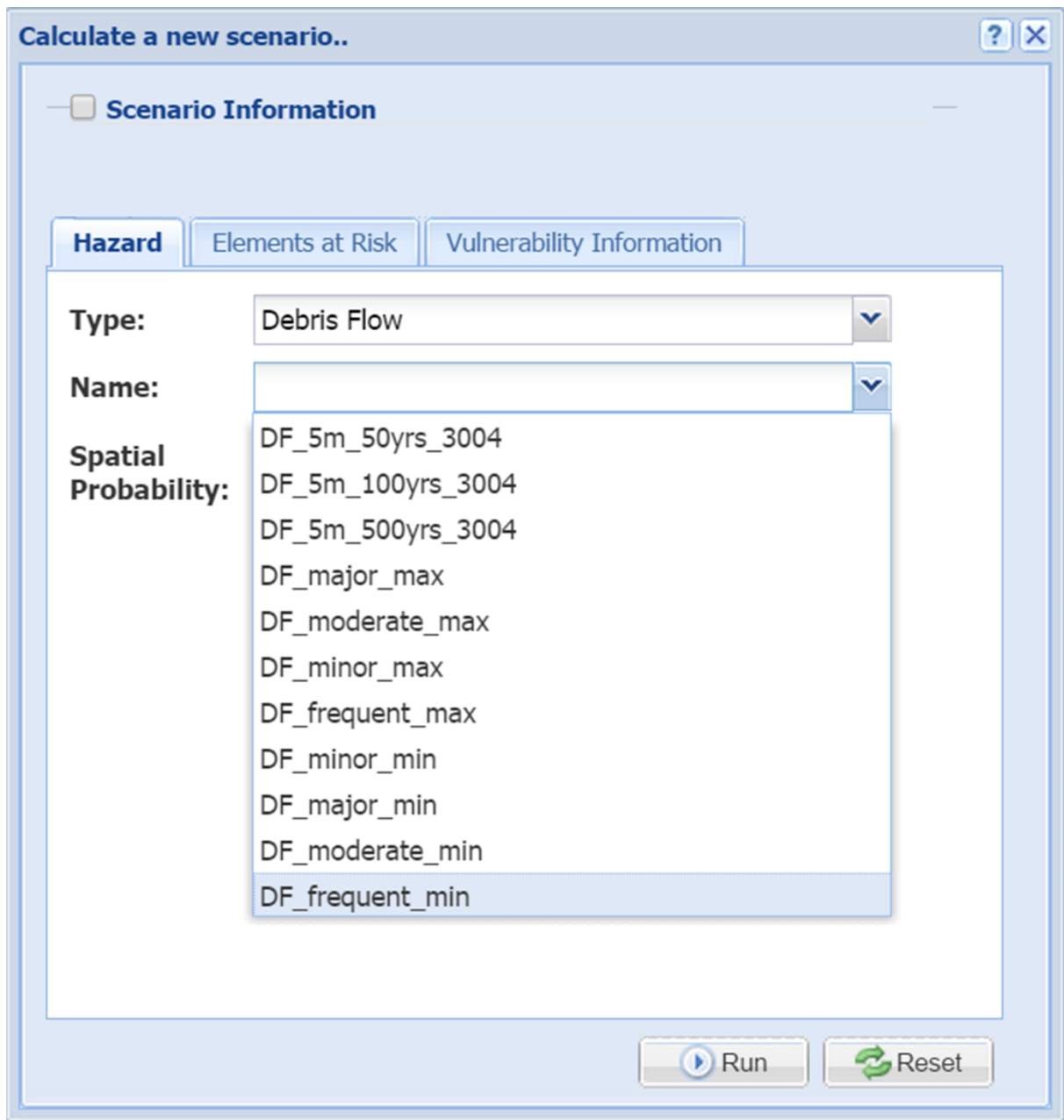


Fig. S4. The interface of the loss component illustrating the selection of hazard input parameters for calculation of a loss scenario. The user can select an existing hazard map depending on the selected hazard type (e.g., debris flow). If available, its corresponding spatial probability information can be given, either in the form of map or input value (0 to 1).

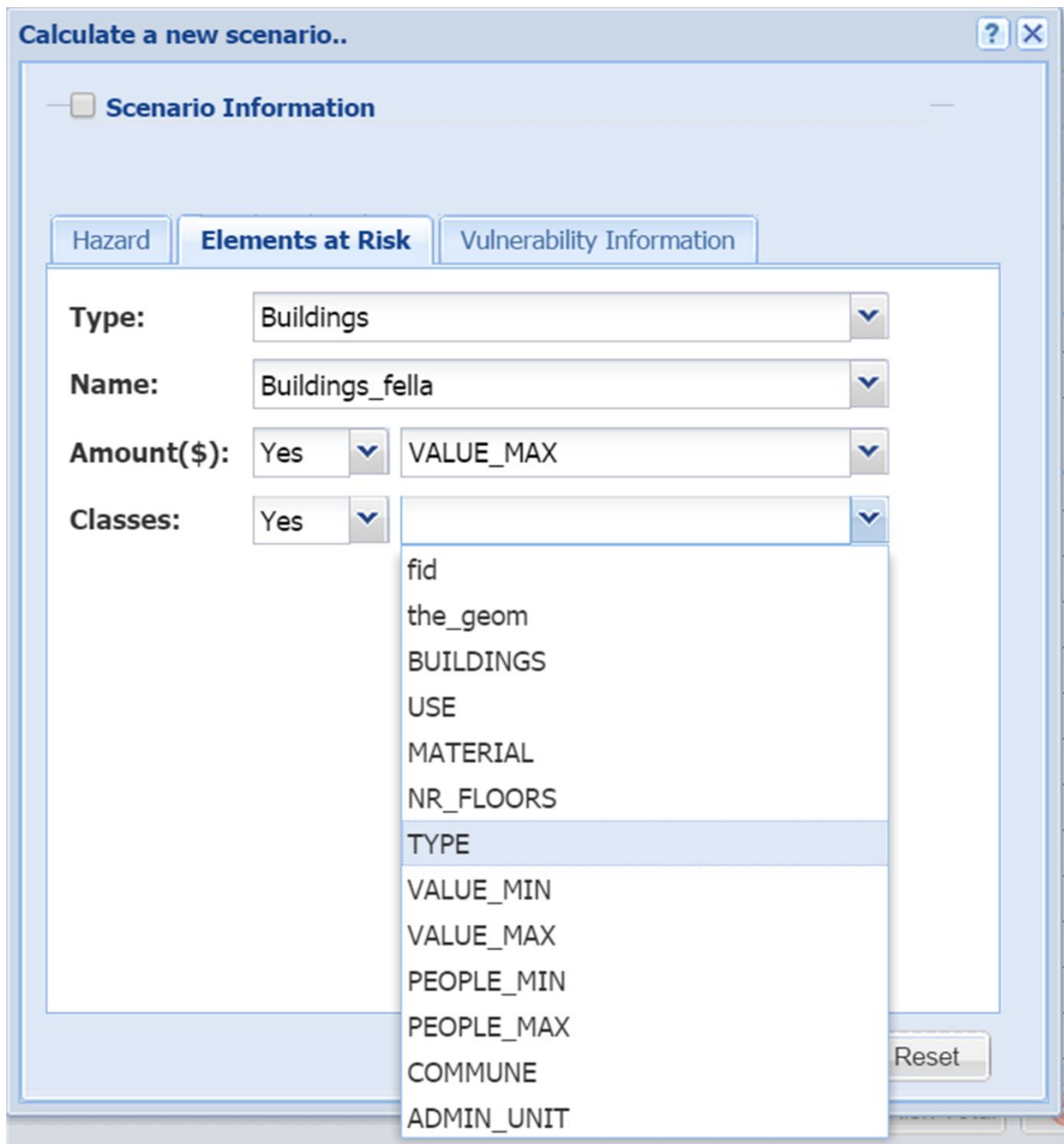


Fig. S5. The interface of the loss component illustrating the selection of elements-at-risk input parameters for calculation of a loss scenario. The user can select an existing elements-at-risk map depending on the selected type (e.g., buildings). If available, the user can enter additional information such as amount (e.g., building value) and class (e.g., material type), by querying attribute information of the selected elements-at-risk layer.

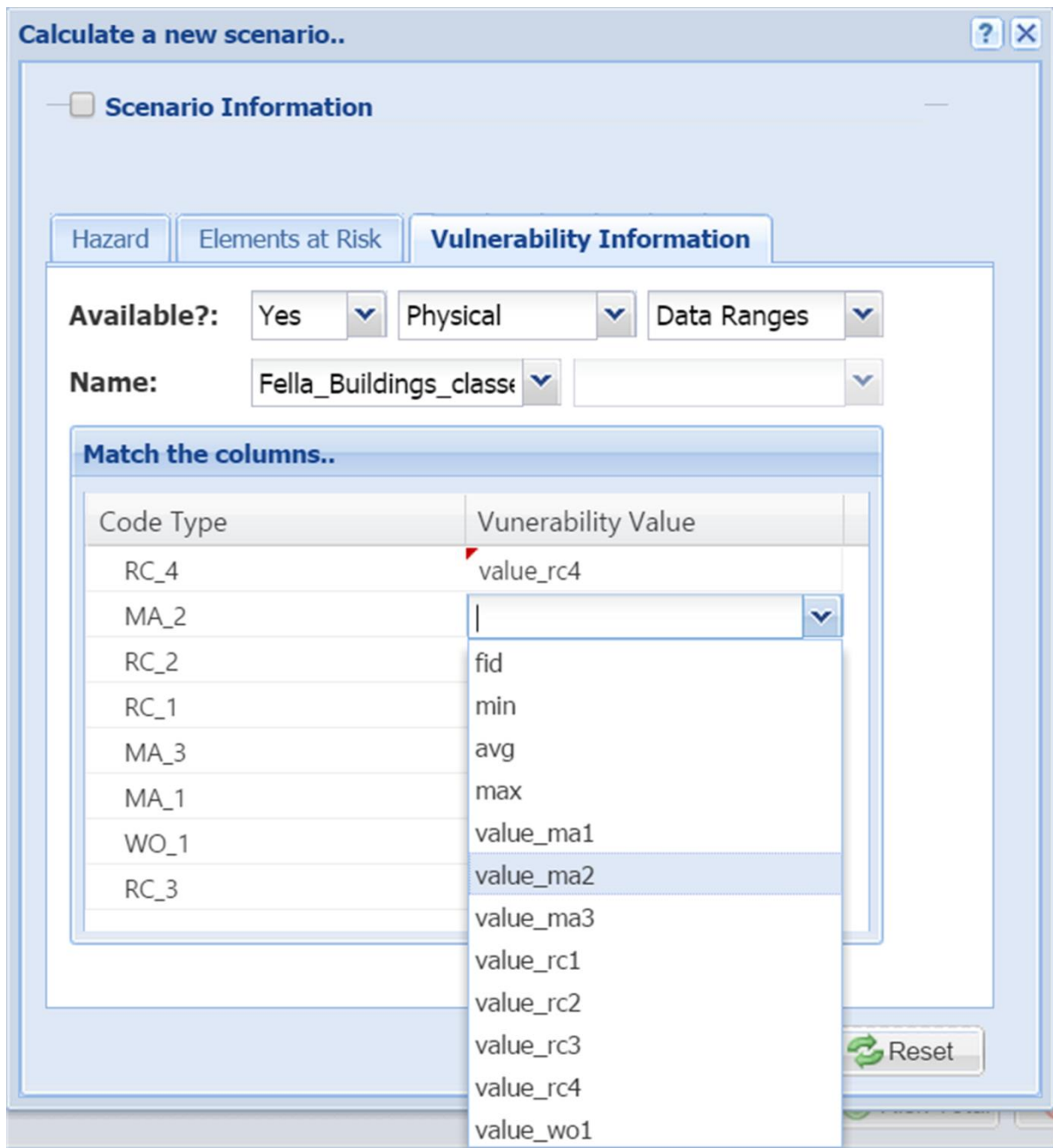


Fig. S6. The interface of the loss component illustrating the selection of vulnerability input parameters for calculation of a loss scenario. If vulnerability information is available, the user can select the available information based on its data type (either data ranges or function). Then, the user can match the vulnerability data of the selected curve with existing classes (e.g., material types) of the selected elements-at-risk layer accordingly, to retrieve the corresponding vulnerability value of a certain level of intensity on each affected object.

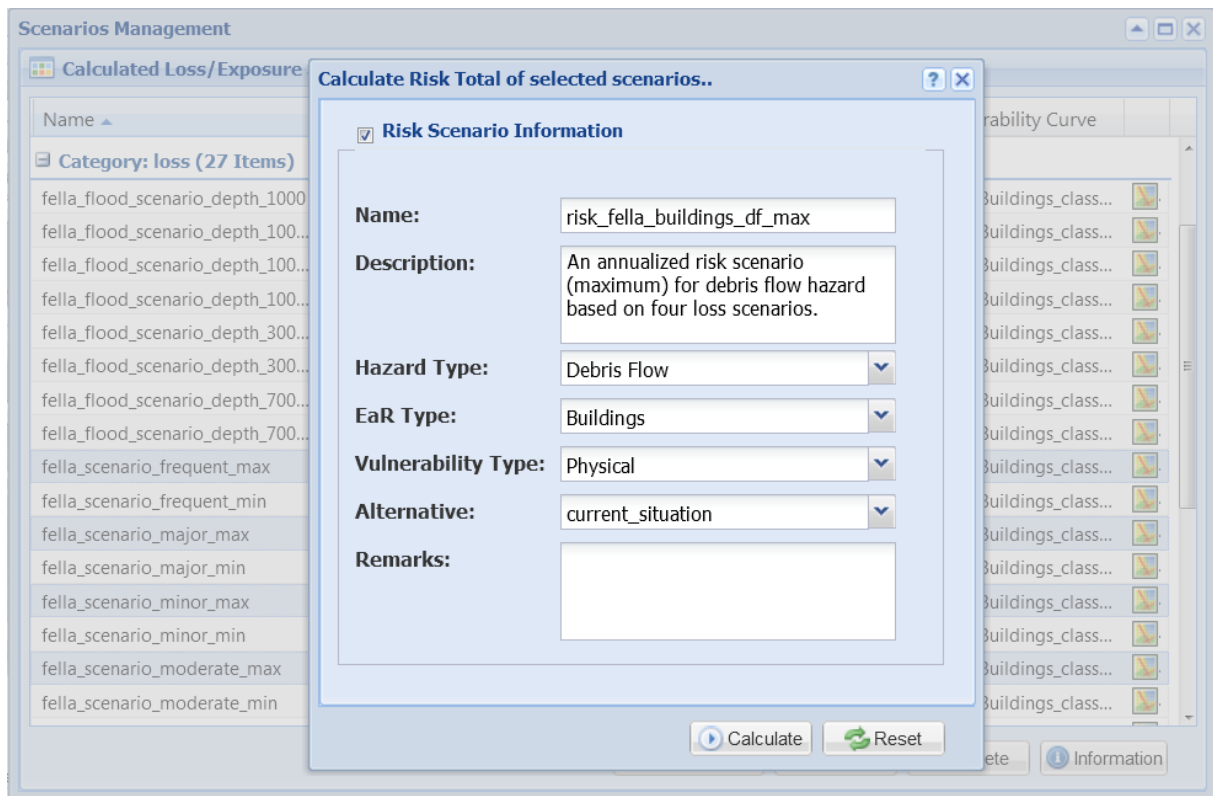


Fig. S7. The interface of the risk component illustrating the selection of loss scenarios for calculation of an annualized risk scenario. At least three or more loss scenarios with different return periods are required, and the user can enter related information such as name, description, hazard, elements-at-risk and vulnerability type of the calculated risk scenario.