

O.T4.2 'Road map for a multiple actor and decision targeted information process'

GREEN RISK 4 ALPS



Responsibility for Deliverable

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Göttingen, May 2021

Summary

The GreenRisk4Alps project examines innovative forest-based solutions in support of the Alpine risk management. Risk management is related to gravitational natural hazards – snow avalanches, rock fall and landslides, and this document is about tailoring risk management solutions based on the GreenRisk4Alps (GR4A) scientific information. The principles of transferring knowledge into praxis are based on the RIU Model and our experiences in the GreenRisk4Alps project as well as other joint projects like Horizon 2020 project ALTERFOR ([www. https://alterfor-project.eu/wp4.html](https://alterfor-project.eu/wp4.html)). The Road Map shows in three steps how scientific innovation can work in praxis.

Firstly, by “Diagnosis” an individual actor is estimating the relevance of the GR4A scientific information for his own risk management or forest use. An estimation of relevance depends on (i) the specific problem the actor is dealing with, (ii) the potential allies the actor could win for implementing solution(s) in praxis and (iii) the link between praxis solution(s) and currently relevant public goals. Only in the case that the relevance is estimated as high it makes sense to go to the second step.

Secondly, by “Consultation” an individual actor estimates the soundness of the scientific information while consulting researchers. Actor gets into direct contact with researchers, either through already existing channels, like meeting places, or by creating new ones. Within such integration forums the actor gets the possibility to estimate the limits of scientific results and better evaluate own science-based solution. Further on, the own solution can be fine-tuned in a close science-praxis discourse. Finally, the credibility can be checked, i.e. in how far the research was adhering to the principles of good scientific practice.

Thirdly, in the preparation for the “Implementation”, the actor is checking the legal framework and the economic resources for the preferred solution. In addition, this solution has to be well embedded into democracy and good governance.

In the end, this Road Map provides a check list for tailoring science-based solutions by stakeholders. This checklist contributes facilitating implementation of GR4A results in the praxis and it is prepared as a guide for policy and praxis. Stakeholders in praxis can use this Road Map to make sense out of the science. In the case when scientists have to foster praxis to engage and consider scientific results the GR4A project developed another guideline called the “*Road Map for decision targeted communication of green risk management (DT4.4.1)*”.

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Abbreviations

Ecosystem Services	ES
GreenRisk4Alps	GR4A
TEchnical GReen or AVOided damages.....	TEGRAV
Forest Assessment Tool.....	FAT

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1. Tailoring your own risk management project based on the GreenRisk4Alps results

The issue of risks from natural hazards is highly relevant for nearly everybody using the Alpine region - either for housing, recreation, transit or diverse land uses. Professional risk management creates conditions for safety of the people in the Alpine region since more than 100 years, and forests often play a key role in risk control measures. In spite of that, gravitational hazards like rock fall, landslides or avalanches are still causing severe damages every year. There is accordingly an urgent need to improve the Alpine risk management and increase people's safety in the future.

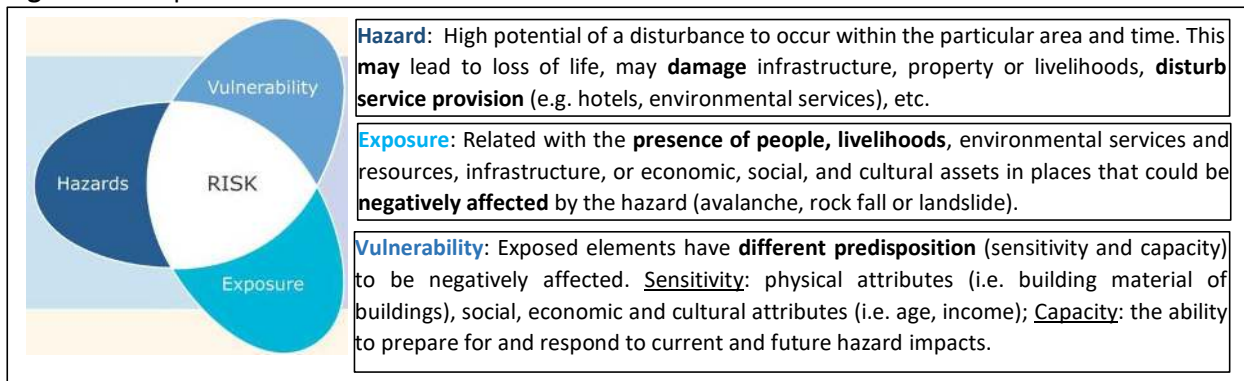
This GreenRisk4Alps Output (OT4.2) called "Road Map for a multiple actor and decision targeted information process" *informs multiple actors interested in Alpine regions on how to utilise scientific information of the project and how to form innovative alliances supporting selected science-based and ecosystem-oriented risk control measures.* **Main target groups** are (i) public agencies involved in risk management, which often have to choose between green prevention, technical prevention or reduction of land use in risk zones; (ii) political actors like majors, local parliaments or engaged groups of civil society, which are strongly involved in the risk issues; and (iii) service providers, service users and citizens of the Alpine regions, for whom risk management is a highly relevant safety issue, too. For all these actors it is usually a challenging task to get most actual scientific results, select the best ones and integrate them into science-based solutions that will work in praxis. Whereas previous GR4A deliverables were dealing with strategies for delivering tailored project results to the actors from praxis (GreenRisk4Alps Project Report 2020a, 2020b, 2021a, 2021b), this Road Map shows **how to deal with scientific results** and scientists after getting first information about a research project and its results.

The first contact with the research project may be at **any project stage**, each related to a different phase of the research process. Active stakeholder involvement can be highly valuable at the initial phase, when a research project is being designed and formulated; or in the end, when project results are ready and actors are able to judge their relevance while selecting scientific information that is useful to their interest-oriented action and can help improve their own risk management solutions. This Road Map exemplifies the optimal use of scientific information produced during the GreenRisk4Alps project lifetime. Yet, the way of making sense of science holds also for all other project stages or other scientific projects aiming to facilitate implementation of scientific information in the praxis.

1.1 GreenRisk4Alps results

The project GreenRisk4Alps provides **scientific information about improving the risk management in the Alpine regions**. Alpine regions are exposed to natural hazards such as rock fall, avalanches or landslides. The hazard itself does not however automatically constitute a risk; for example, if it occurs in an area where no assets or people are present, then there is no exposure of any elements (Cocuccioni et al., 2020). And in the case that there are elements exposed to hazard, then not all of them must necessarily also be vulnerable (ibid.). The GreenRisk4Alps accordingly perceives risk as a combination of a natural hazard, exposure and vulnerability elements (Figure 1)¹.

Figure 1: Components of the Risk-definition



Source: Cocuccioni et al., 2020 (adapted) (textual part adapted from IPCC, 2014; GIZ and EURAC, 2017)

While aiming to improve the risk management in the Alpine region, the GreenRisk4Alps project generated diverse products by using scientifically accepted principles, methods and standards. This scientifically sound products are sublimed into a “*Catalogue of GreenRisk4Alps research products*” (Table 1), consisting of a main product (a set of expected and aimed scientific information of a research project) and a by-product (scientific information which supports the development of the main product, but is not in focus of the project aim and not necessarily mentioned in the research). The products from the GR4A catalogue emerged during the project lifetime (2018 – 2021), when researchers were analysing the effects (of existence or absence) of forest cover on potential consequences of natural hazard processes (landslides, rock falls and snow avalanches) in six Pilot Action Regions (PAR) - Parc des Baronnies Provençales (France), Val Ferret and Southern Wipptal (Italy), Kranjska Gora (Slovenia), Brenner region (Austria) and Oberammergau /Germany). That analysis was combined with the analysis of the risk management measures that are currently being applied in the six regions, as a point of departure for considering improvement of existing or introduction of alternative risk management solutions.

¹ In GreenRisk4Alps, the risk concept of the Fifth Assessment Report (AR5) of the IPCC Working Group II was adopted.

Table 1: Catalogue of GreenRisk4Alps (GR4A) research products

Research products	Main product	By-product
Forest protection function by the Flow-py model: GIS-based regional scale gravitational hazard runout model	✓	
Protection forest definition matrix <i>Consistent definition of protection forests to achieve the objectives of Green-Risk4ALPs</i>		✓
Maps “Direct Object Protection Forest”; <i>located between natural hazard release areas and endangered infrastructure</i>	✓	
Maps “Efficient Green Mitigation Areas”; <i>Mapping of highly effective areas for hazard energy reduction by suggesting: (i) potential areas for afforestation, creating “Direct object protection forest” (ii) existing “Direct object protection forest” that is highly effective</i>	✓	
“The forest plugin”*; <i>estimates the (protective) effect a forest has on the hazard process (energy reduction - reduction of velocity and runout distances), dependent on “actual” forest structure</i>		✓
“The back-calculation of process paths plugin” *; <i>(i) identifies the location of hazard starting zones (ii) calculates hazard process paths associated with endangering infrastructure, classifies identified process areas to the classes of endangered infrastructure</i>		✓
Data sets “Impact Reduction Index”; <i>degree in which the surrounding “uphill” forest offers direct protection against a natural hazard process (decreasing the likelihood of natural hazard to reach the location or decreasing its impact at this location).</i>		✓
GIS-based spatial modelling (spatially explicit assessments): modelling for identifying areas where the forest can play a role in protecting infrastructure from hazards; provides maps on the regional scale)	✓	
<i>Exposure assessment</i>	✓	
<i>Spatial analysis in selected hotspot areas</i>	✓	
Forest assessment tool-FAT: web Interface to estimate the value of natural hazard protection forests	✓	
Economic modelling (costs and benefits of TEchnical, GReen or AVOIDed damages - TEGRAV model); <i>model strictly linked to the hazard model, and both embedded into the FAT tool.</i>		✓
Direct costs (e.g. for snow fences: construction + maintenance + dismantling costs)		✓
Indirect costs (e.g. if the road closure measure gets chosen, the indirect cost is the cost of the de route to reach the same destination avoiding the closed road)		✓
Benefits (net economic benefit of the chosen measure minus indirect costs to the avoided damages)		✓
Avoided damages (damages that get avoided due to the adopted measure)		✓
Participatory approach (Rapid risk appraisal - RRA): for identifying improvement aspects of current risk management strategies and practices (assesses the availability and quality of different activities that are currently in place)	✓	
Risk identification (discussing general sensitivity to main natural hazards, starting from lessons from the past and moving on to potential and future risks)		✓
Risk analysis (discussing risk management practices in place)		✓
Risk evaluation (generating Risk Management Profile on a spider net, with a comprehensive picture of risk management practices and their aspects)		✓
Risk profile (comparison of different natural hazards for various study areas; best practices from one area can be transferred to another area with specific weaknesses)	✓	

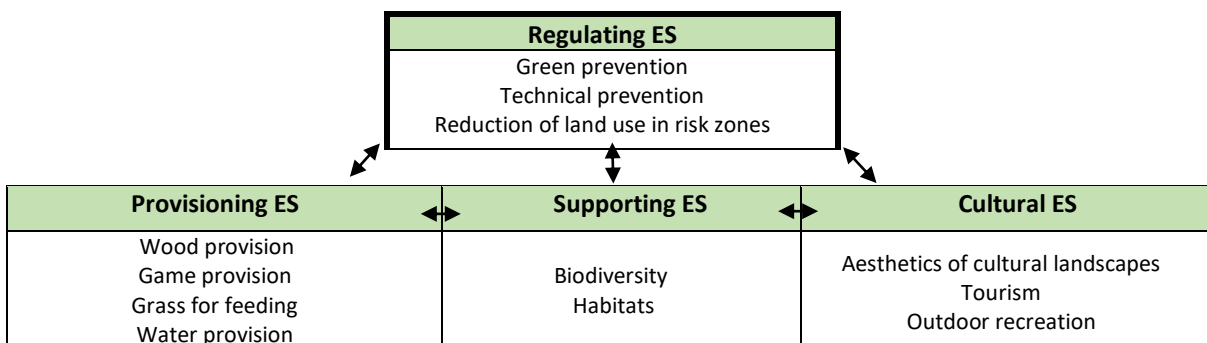
Legend: *Plugin: enables users to adapt the model (in this case the Flow-py model) to address a specific question. Source: Own table based on GreenRisk4Alps Project Reports, 2018-2021 (summarized by Kirchner, Zavodja 2021)

If you are already active or you plan to become active in the ecosystem-oriented risk management of the Alpine region, then the research products generated by the GreenRisk4Alps project may support your daily or strategic activities. The Catalogue of research products (Table 1) is on your free disposal - to select and include one or more products (or their parts) into your specific science-based and ecosystem-oriented (risk control) activity in the praxis.

Before proceeding to the three basic steps needed for tailoring your own praxis project (chapter 1.2), first you have to make a realistic picture about your willingness and ability to act:

- Willingness is linked to the tasks you are conducting and interests you have. Both are individual and might highly differ from actor to actor. Yet, if interests and tasks are related to Ecosystem Services – ES (Figure 2) then the GR4A research products may trigger your attention. The GR4A research products are primarily linked to the regulating Ecosystem Services (Figure 2, bold), bringing protection forests into affordable and long-term-oriented risk management by balancing green, technical and avoidance risk strategies against natural hazards (snow avalanches, rock fall, landslides). **Green prevention**, as a regulating service, means maintenance, afforestation or deforestation of protection forests. Technical strategies for risk prevention/mitigation are setting up artificial structures in ecosystems to prevent or mitigate natural hazards whereas reduction of land use in risk zones means changing the previous land use to a different one in order to prevent or mitigate risks of natural hazards (GreenRisk4Alps Project Report (2019): D.T2.3.1). Both risk strategies, technical risk strategies and the reduction of land use in the risk zones, are strongly influencing ecosystems, affecting simultaneously also the human well-being. For the purpose of visualizing different tasks and interests of actors in the sphere of risk management more precisely we subsumed both of these strategies (technical prevention, land use reduction) under the regulating ES (Figure 2). Regulating ES are further interlinked with other three ES categories: provisioning, supporting and cultural ES (Figure 2). While having in mind particular risk management or ecosystem-oriented forest use in praxis you are encouraged to think in terms of **ES** and try to **find those related to your specific area, tasks and interests**.

Figure 2: Ecosystem Services (ES)



(Source: GreenRisk4Alps Project Report (2019): D.T2.3.1, changed)

- Ability is related to your realistic judgment of the resources at your disposal to engage into the particular activity. The most important (e.g. legal and economic) will be handled here in brief, but no guideline is able to grasp all the particularities of a single case. For that reason, the steps below can be understood as a decision support – to realistically estimate major implementation aspects of your own praxis project and its chances for success.

1.2 Steps for integrating research products into your praxis project or activity

For becoming part of the praxis project or activity, scientific information selected from the research product catalogue has to be integrated into the existing knowledge and experience of a particular actor (Stevanov and Krott, 2021). Based on this new knowledge, actors are tailoring own projects or science-based activities in the praxis. For that, there are three basic steps (with the several aspects within each). Consider carefully each step and proceed to the next if most of your answers to particular questions are YES.

STEP 1: DIAGNOSIS

Estimate the relevance of the GR4A research product for your risk management OR your ecosystem-oriented forest use in praxis.

Main question: is the particular *GR4A research product relevant for my risk management OR my ecosystem-oriented forest use in the Alpine region?*

Main aspects:

- relevance regarding my risk management (incl. political/economic setting)
- relevance regarding potential allies
- relevance regarding public goals

1A: Is the particular GR4A research product relevant for my risk management OR my ecosystem-oriented forest use in the Alpine region? Yes No

You or your activities are part of the Alpine landscape. You may be involved in the forest management, civil protection measures, natural hazard risk management, live in a house or own a hotel protected by the forest, operate or use a highway or train infrastructure passing through the protective forest. This direct object protection, which forest is providing for your specific activity, is an example for the relevance and so the key for answering whether GR4A research products related with direct object protection are relevant for you. In addition, consider the three alternatives: (1) Green prevention, (2) Technical prevention, (3) Reduction of land use in risk zones (Figure 2). Besides, have a look on how the issue of risk prevention against natural hazards fits into your actual economic and political agenda. It may also turn out that the specific, newly designed and scientifically-based prevention measures oppose your specific interest in using the forest landscape. In this case you are

free to resist scientific solution(s) fully or to exclude parts of the solution(s) that you do not accept. Not all scientific solutions fit for all users.

1B: Does particular GR4A research product has relevance for my potential allies? Yes No

You may find it useful to think about actors’ networks holding stake in the Ecosystem Service of your interest and then consider for whom your particular risk management or forest use might be particularly relevant. If you detect a potential ally, then the activation of alliance could improve success chances of your planned action. Yet, this potential ally (or more of them) has also to be interested and open for the research product you are relying on. In the opposite case, meaning that you want to resist the solution, then linking with allies would mean that you can hinder science-based solution and protect you from negative consequences of it.

1C: Is there a link between my risk management OR my ecosystem-oriented forest use and the relevant public goal(s)? Yes No

Public goals are backbone of global-to-national policies and they basically target all of us. Linking (one or more) currently relevant public goals with your problem or forest use may provide highly required legitimacy to your project or action based on the GR4A research product. By that, it is advisable to avoid legitimization by the goals that are to unspecific, like the goal of sustainable forestry, because of their limited political outreach. Instead, think widely! As a source for your ideas, but more importantly also as a reference, you should consider goals launched by the national ministry programs or national strategies, well acknowledged norms of a civil society or currently actual goals of international processes. The new Climate strategy of the European Union (EC, 2021) is for example calling for rolling out physical solutions for more green spaces (p.12) and doing it in a cost-effective way (p.11). And protective forests are green solutions that are supposed to have certain cost advantages compared to other hazard mitigation options². While including protective forests into the risk management, either to stabilize the ground (while afforesting grounds where no forest was growing before) or to reduce impact of natural hazards (snow avalanches, rock fall and landslides), the GR4A research products may not only have a potential to contribute increasing human safety, but may find broader application as climate friendly solutions as well. Opposite to immediately effective technical measures, such as rock fall nets, ecosystem-oriented solutions have the potential to adjust to the challenges driven by global environmental change (Poratelli et al., 2020). You will have to invest time and creativity in finding out which strong public goals your specific project/activity will serve.

² Reid H, Bourne A, Muller H, Podvin K, Scorgie S, Orindi V. (2018) A framework for assessing the effectiveness of ecosystem-based approaches to adaptation. In: Zommers, Alverson (eds.) Resilience, p. 207-216. London, UK: Elsevier.

STEP 2: CONSULTATION

Estimate the scientific basis of the GR4A research product that is relevant for you. Undertake this step only if most of your answers in the previous STEP 1 were **YES** .

Main question: is the relevant GR4A research product scientifically sound and available?

Main aspects: - looking for open doors to science

- consulting scientific institutions / project teams about product limitations
- consulting diverse sources about credibility of research results
- selecting (parts of) products and consulting researchers for fine-tuning (if needed)

2A. Do I or my organization have open doors to science?

Yes No

First of all, check the ways your organization is making use of science in a daily praxis. Are there specific open doors to science like working groups, scientifically knowledgeable collaborators or other persons experienced with science that work for your institution? Or if you are a single person – think about how you are making use of scientific information in your daily life. Have you perhaps obtained scientific-based education or could you trust that your information about scientific results reflects state of the art? In any of these cases you should consider your existing links to scientific information. In general, such links are provided by the experts within your organization. These “integration forums” (Kirchner and Krott, 2020) may be either small or big, but it is essential that they open the door to science.

2B. Can I or my integration forum check limitations of particular research product(s)?

Yes No

The first task is to get into direct contact with the scientific organization(s) and its researcher team who is offering a research product of relevance for your risk management or ecosystem-oriented forest use. Only through the direct consultation you will be in the position to get precise information that can help consider options for using this research product in the particular case more profoundly. E.g., if your tasks and interests are concerned with the direct object protection of the particular forest then you may want to check availability of “Maps for direct object protection forest” for your Alpine region, or maps of “efficient Green Mitigation areas” (Table 1). All mentioned research products are based on strict scientific procedures and theory-based models, which are already established within the scientific community, but they all have their specific limits. For example, models are limited in terms of included variables or there might be some uncertainties in available data sets. The direct contact between you (or your integration forum) and the researcher team will provide insides into the presuppositions of the specific model, according to which you can make the first judgment of suitability of its application to the problem and area of your interest.

2C. Can I or my integration forum check credibility of research results? Yes No

If you gained sufficient background information about the procedures that the research product is relying on (first of all about limitations) and you still consider including scientific information into praxis project or action, then you have to undertake the next step: to judge scientific credibility of research results. For this you can first consult organization’s web site while looking for indicators about the research team who is offering the research product. Examples of such indicators are the intensity with which their research results are published in scientific journals or the existence of networks with other researchers and research institutions, especially with those you know already or you have cooperated with. As you may not always be in the position to judge the scientific quality of the research, it is not unfair to ask another organization for an independent judgment. This holds not only for the information from the web sites but for all sources, including diverse media channels (e.g. Facebook or Twitter). Those channels increasingly provide hints to the innovative results, yet the scientific basis of such results has to be checked before you are certain about putting efforts into the project implementation (Step 3). It is not recommendable to rely, for example, on the results generated by isolated researchers, who have a poor publishing record but communicate their results in a rather spectacular way. Such results often find their way through the media channels but you need to cross-check their scientific credibility.

2D. Can I or my integration forum check fine-tuning possibilities for (parts of) the research product of my interest? Yes No

The first three steps (finding open doors to science, checking product limitations and scientific credibility) will often not be sufficient to decide whether or not the particular research product fully fits to your problem. Science can neither answer every specific question from praxis nor it provides comprehensive best solutions. From that reason you have to identify the specific contribution to your interests or solution (e.g. calculating the likelihood of an uphill natural hazard to reach the downhill hotel; the costs of avoided damages; etc.). You may get different answers. Rarely, but it could happen that the scientific information fully supports your planned activity (no additional information is needed, no additional aspects have to be covered). Then select it and use it as an argument or incorporate it into your own project in the particular area. More typically, some additional scientific information will be needed, which might require some time and resources. If you have these resources then contact the research team to agree about fine-tuning procedure (by that, scientific rigour and procedures remain intact). Sometimes, deficits of scientific information will appear too big. In that case you may think to either initiate additional research project or to step out.

STEP 3: IMPLEMENTATION

Estimate implementation chances of your GR4A-based activity. Undertake this STEP 3 only if most of your answers in the previous STEP 2 were **YES** .

Main question: Does my GR4A-based activity has realistic chances to become implemented?

Main aspects:

- legal framework
- economic framework
- democracy and good governance

3A. Can my risk management or ecosystem-oriented forest use be embedded into existing legal framework? Yes No

Laws are strong and durable institutions, which exercise influence on humans through enabling or restricting their activities on the ground. Therefore, check legal space for implementing your GR4A-based activity. If your ecosystem-oriented forest use would for example lead to increased municipality costs for the protection measures, then you might already search for financial instruments that particular laws might be offering and check if municipalities are eligible to apply. Also, exploring legal limits is advisable, because overcoming them later might be a long-lasting political process.

3B. Can my risk management or my ecosystem-oriented forest use be embedded into existing economic framework? Yes No

Risk management is costly. Whatever your case is, the issue of sufficient economic resources has to be wisely considered, either while counting on markets or having checked public sources (regional, national, international). Also, public-private partnerships may be an option. In every case the cost-efficient ways will save resources and open a broader space of action. Be realistic about economic side of your problem or your ecosystem-oriented forest use. Project activities typically consume more resources than estimated. Thus, consider sources that may be activated immediately or in a shorter run but search also for options in longer term, by clearly avoiding wishful thinking.

3C. Can my risk management or my ecosystem-oriented forest use be embedded into good governance and democracy? Yes No

Your GR4A-based risk management activity or forest use may be caught within the limits set by the law and/or economic resources, but paying attention to different strategies of good governance and democracy may enlarge your space of action. Involving multiple actors (as one of good governance principles) may for example raise awareness about your problem or enhance acceptance of your ecosystem-oriented forest use. Participation of multiple actors may also increase political or economic support for your GR4A-based activity.

Because of the charged nature of risks³ however, all participation processes related to risk governance are highly vulnerable to conflicts (e.g. to what extent the costs that are covered by many will benefit to only some?). Some examples from the past show that processes may result in shifts toward certain interests or cause a “crisis in governmentality” instead of governance⁴. This may endanger democratic legitimacy of your activity. Therefore, it is advisable to first assess potential conflicts that your GR4A-based activity may mitigate, increase or additionally trigger. Depending on your assessment you might still find it worth to proceed. Then, finding professional support for handling multi-actor participation about risk issues may be advisable. Not only that these issues are prone to distributive conflicts but the line between your aims (e.g. fostering participation for rising attention and transparency) and counterproductive effects (triggering fear by the community members) of the process is very thin and so better perceived and handled by professionals.

Also, be aware that you are part of the democratic environment, which means that you have to be transparent about your activities. Depending on your issue and your target group you may use multiple channels for distributing information to your target groups. If you aim at a broader outreach, you may want to use digital and print media reaching wider population, or you may cooperate with the local media for some very specific issues. Also (tailored) campaigns or public debates may be thinkable. It is for example known from the recent research⁵ that appropriate risk communication can trigger adaptive behaviour. Yet, for triggering such effects, you have to bear in mind that inputs into risk communication need to be carefully considered. In that context, the modelling results of GR4A project might be useful. For example, when rising awareness of laypersons about wider benefits of protective forests, like the benefit of mitigating climate change. Or to appoint at impacts that adaptation of the forest management to the protective role of the forest will have on the biodiversity (selection of tree species, position of trees, etc.). Layperson can otherwise hardly imagine protective effects of the forest right.

1.3 CHECKLIST for successful implementation of tailored, local risk management project

For final evaluation use the research product(s) offered by the GreenRisk4Alps project (Table 1) and go through Step 1 to Step 3 again. They are summarised as a Checklist below (Figure 3). Let these steps and their particular questions guide your answers, so that you arrive at the realistic estimation of your chances to solve particular risk management problem or to realise your ecosystem-oriented

³ Craye M, Funtowicz S, Van Der Sluis JP. (2009) A reflexive approach to dealing with uncertainties in environmental health risk science and policy. *Int J Risk Assess Manag* 5:216–36; Beck U. (1986) *Risikogesellschaft: auf dem Weg in eine andere Moderne*. Frankfurt am Main: Suhrkamp; Johnson GF. (2005) Taking stock: the normative foundations of positivist and non-positivist policy analysis and ethical implications of the emergent risk society. *J Comp Pol Anal* 7:137–53.

⁴ Bailey, DJ (2006) Governance or the crisis of governmentality? Applying critical state theory at the European level. *J Eur Public Policy* 13:16–33; Eberlein B, Grande E. (2005) Beyond delegation: transnational regulatory regimes and the EU regulatory state. *J Eur Public Policy* 12:89–112; Knill C. (2001) Private governance across multiple arenas: European interest associations as interface actors. *J Eur Public Policy* 1(8):227–46.

⁵ Attems MS., Thaler, T., Snel, K., Davis, P., Hartmann, T., Fuchs, S. (2020) The influence of tailored risk communication on individual adaptive behavior. *International Journal of Disaster Risk Reduction* 49, 101618.

forest use in praxis. The more positive answers you get, the better the odds for the successful implementation of your tailored, local risk management project or action. Good luck!

Figure 3: Checklist

<p>STEP 1</p> <p>Is the GR4A research product relevant for my risk management OR my ecosystem-oriented solution?</p>	<p>1A. Is the particular GR4A research product relevant for my risk management OR my ecosystem-oriented forest use in the particular Alpine region? <input checked="" type="checkbox"/></p> <p>1B. Does particular GR4A research product has relevance for my potential allies? <input checked="" type="checkbox"/></p> <p>1C. Is there a link between my risk management or ecosystem-oriented forest use and relevant public goal(s)? <input checked="" type="checkbox"/></p>
<p>STEP 2</p> <p>Is the relevant GR4A research product scientifically sound and available?</p>	<p>2A. Do I or my institution have open doors to science? <input checked="" type="checkbox"/></p> <p>2B. Can I or my integration forum check limitations of the research product of my interest? <input checked="" type="checkbox"/></p> <p>2C. Can I or my integration forum check credibility of research results? <input checked="" type="checkbox"/></p> <p>2D. Can I or my integration forum fine-tune selected research product or its parts? <input checked="" type="checkbox"/></p>
<p>STEP 3</p> <p>Does my GR4A-based solution has realistic chances to become implemented?</p>	<p>3A. Can my risk management or ecosystem-oriented forest use be embedded into existing legal framework? <input checked="" type="checkbox"/></p> <p>3B. Can my risk management or ecosystem-oriented forest use be embedded into existing economic framework? <input checked="" type="checkbox"/></p> <p>3C. Can my risk management or ecosystem-oriented forest use be embedded into good governance and democracy? <input checked="" type="checkbox"/></p>

This Check List is meant to be used by stakeholders in praxis. For the options that scientists have at their disposal when fostering scientific support of praxis please look into the GR4A Report “Road Map for decision targeted communication of green risk management” (DT4.4.1).

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