Anticipate Future Jobs on Alpine Remote Areas

Report on WP 4

Recommendations for the implementation of measures to match future labour demand and offer

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Summary

1. Introduction

WP4 aims to support the partners (indirectly, their stakeholders) in identifying the conditions and initiatives for matching both the side of the local work market within a virtuous cycle: provision of training for suitable skills at 2030 (job offer) and support to apt social-economic environments for local development (job demand).

The expected output from WP4 is a collection of shared and structured ideas about measures to improve, to maintain or to create such a virtuous cycle.

The target group (final beneficiaries) of such work package includes, beyond the PPs, young people and local stakeholders of the selected remote areas, such as agencies and labour organizations, educational institutions, professional associations, local administrations, single actors of the local value chains.

KGZS coordinated WP4 activities, supporting the partners in their carrying the WPs 4.2 and 4.3, and elaborated the WP report (action 4.4). Each PP carried out WPs 4.2 and 4.3 according to regional and local situation, supported by FEM.

The coordination (WP4.1) started with a specific meeting organized in KGZS region, including a training workshop about Backcasting and Roadmapping as strategic and foresight tools. The WP4.2 consisted in local replication of a Backcasting exercise at each PPs' region with local stakeholders; similarly, in WP4.3, PPs entailed an exercise of Roadmapping towards the expected 2030 outcomes, as defined in the Backcasting.

2. WP 4.1 Passages towards the desired futures: workshop and guidelines

The training occurred at Maribor (Slovenia), January 14th – 15th, 2019 and included the following topics:

- review of all the previous learnings and results (WP2, WP3);
- training and exercise on Backcasting (with 2030 as time horizon);
- training and exercise on Roadmapping (with a tailored template, adapted to ALPJOBS framework).

The following documents supported the PPs in performing the tasks:

- Guidelines for operative Backcasting session with stakeholders;
- Guidelines to conduct a local Backcasting exercise;
- Guidelines for operative Roadmapping session with stakeholders;
- Guidelines to conduct a local Roadmapping exercise;
- Report Templates on Backcasting and Roadmapping.

2.1. Training and exercise on Backcasting

A Backcasting exercise is like planning a trip: it starts with defining the destination, it starts from the end. As a strategic and foresight tool backcasting requires to make explicit (visualizing and sharing) the intermediate conditions or steps (also named "milestones", or "stepping-stones") assumed to pave the ground towards the imagined end. The reasoning proceeds backwards step by steps, in which the group reflects on the necessary or promising conditions at a previous step (say 2026) to make possible the subsequent step conditions (say 2030), repeating this for the other steps (i.e. 2022 for 2026, and so on). In the version of Backcasting experimented here (there are several variations), the groups also identified some of the possible obstacles between the promising conditions and the expected outcomes, as well as the possible actions to anticipate or mitigate them.
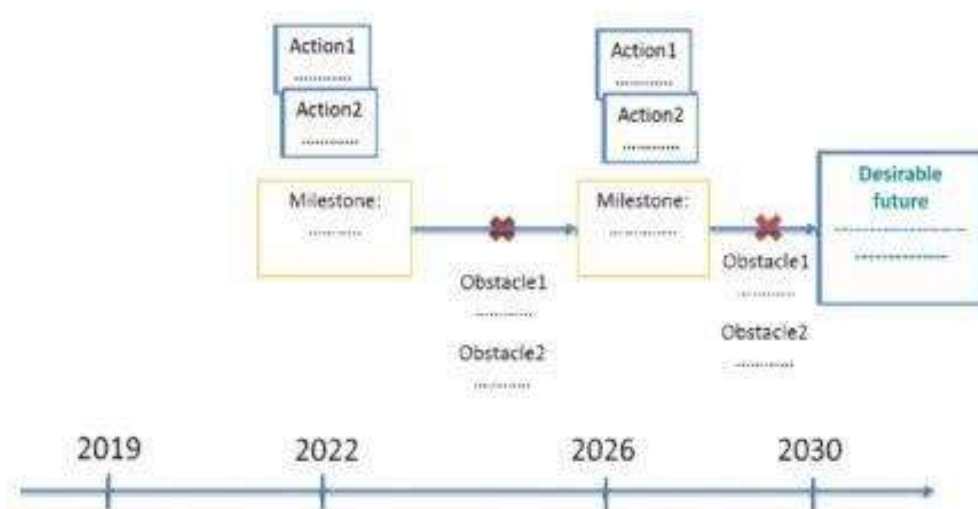

Figure 1 Example of Backcasting timeline from Guidelines.

To define the "desirable future", the partners had to consider all the outcomes from the previous activities, such as the indications from the strategic interviews, the main uncertainties emerged in the scenario building, the variables and processes emerged in Iceberg model exercise, and other results from WP2 and WP3, as well as the frames and the objectives of the project (defining coordinated policy for remote alpine areas concerning education and training for labour market 2030).
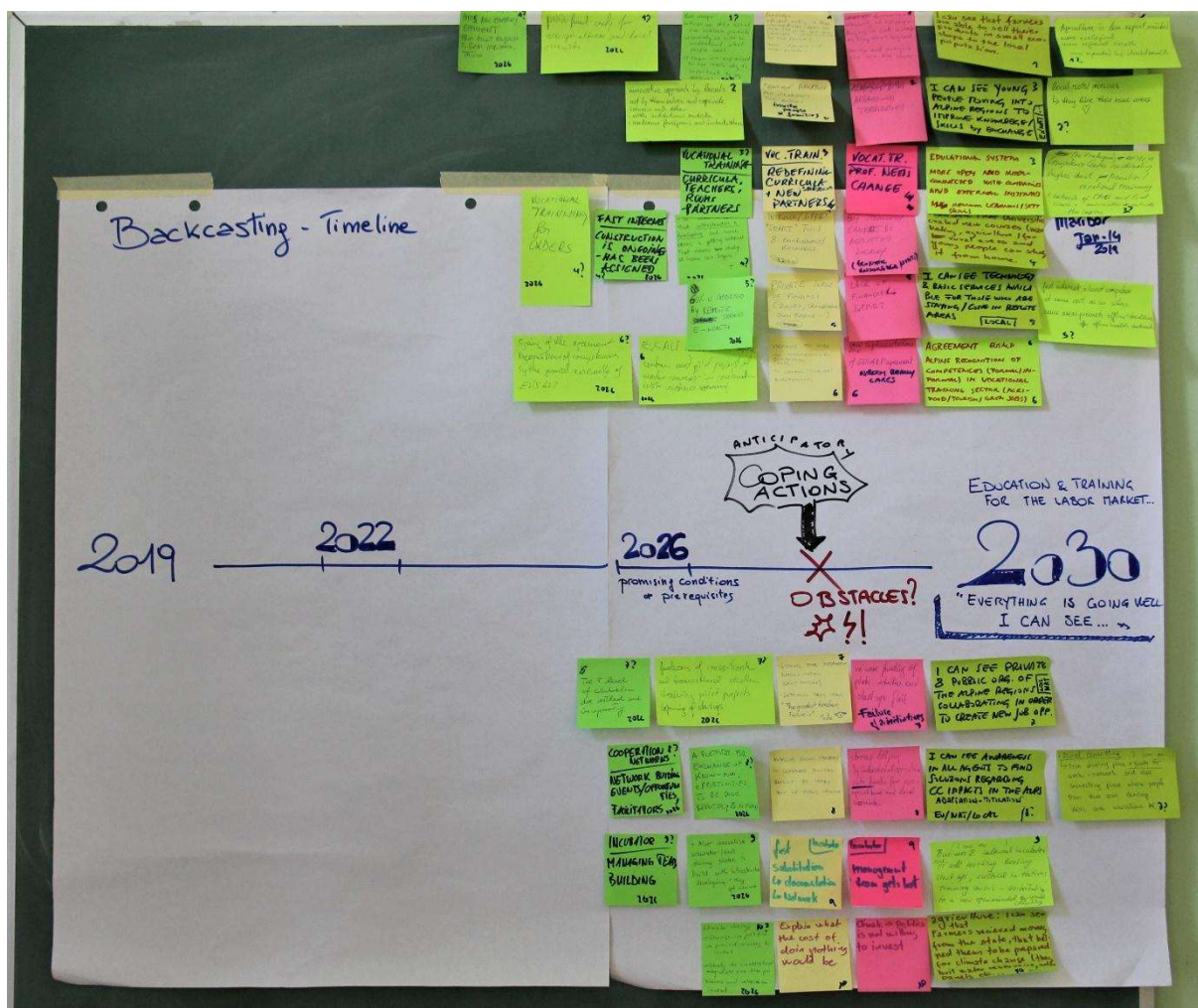

Figure 2 Backcasting timeline from training.

In the exercise the partners only partially developed a Backcasting, defining the desirable future at 2030, the promising conditions at 2026, the related possible obstacles and the anticipatory actions.

Here are some of the main interesting points:

● **desirable future at 2030:**
  ● public and private organizations collaborate to mitigating climate change impacts on the remote areas and related economic activities;
  ● social connections: "sharing places" are established in (digitally connected) alpine remote areas, in these people develop, exchange and share ideas on local innovation, even with exchange periods;
  ● educational system is more open and interconnected with firms and farms;

- the market of local products is established and economically self-sustaining and including innovations;
- the health services are available at the same costs as in cities;
- **promising conditions at 2026:**
  - fast internet is available and embedded in the local innovations (for education, training, production, public and tourism services);
  - training and education are promoted for all ages (including elders);
  - established agreements and cooperation with educational institutions also from outside;
- **possible obstacles between 2026 and 2030:**
  A. lack of financial support, decreasing interest in the EU, national development policies;
  B. lack or delay of innovation in the preparation of vocational teachers/trainers;
  C. abandonment of territories;
- **possible (associated) actions mitigating or anticipating the obstacles:**
  A. private co-funding (donors, crowdfunding, …);
  B. redefinition of curricula and promotion of educational partnerships;
  C. (re-)definition of a "sufficient" population to implement development actions and to motivate young people and families to stay or return in the area.

2.2. Training on Roadmapping

Roadmapping is a mirror to Backcasting, in which the necessary steps or interventions from today to the desired future are specified in detail. The difference between these is the perspective and the level of detail: backcasting concerns the conditions and contexts of an organization (which develops it), roadmapping concerns the decisions and strategies of the organization along a path that approaches the desired scenario. There are many models for developing Roadmapping, the choice depends on the context and objectives of the exercise, the subject or owner and the level of desired detail.

The proposed template distinguished different time horizons and different subsystems. The time horizons include: the past (the last 10 years), the now (2019), the short-term (1 year, or "budget horizon"), the medium-term (3 years, "strategy horizon"), the long-term (5 years, "radar horizon"), the vision term (10 years, corresponding to the frame used in the Backcasting). The considered subsystems are: Community (including the beneficiaries, and related objectives and constraints), Education and Job market (forming the arena of partners' agency), Technology and Resources (the tools to accomplish the interventions and develop the development strategies). Such distinctions allow to operationally detail the possible interventions, considering different perspectives and synergies among different domains, and to better organize them into a feasible and accurate long-term strategy.

	Past	Now 2019	Short-term +1 year «budget»	Medium-term +3 y «strategy»	Long-term +5 Y «radar»	Vision
Community / Education / Job market / Technology / Resources	Includes key influences and events that have led to the current situation (learning points that will influence the success of future plans)	The current situation (where we are)	Concerns the «budget horizon»	It is linked to the strategic planning horizon, highlighting the broader direction and options that influence the short-term decisions and plans	It is about key uncertainties and scenarios to be articulated	The long-term aspirations of the *organization**

	Past	Now 2019	Short-term +1 year «budget»	Medium-term +3 y «strategy»	Long-term +5 Y «radar»	Vision
Community	**«know-why»**: beneficiaries, objectives, and constraints					
Education / Job market	**«know-what»**: tangible systems to be enhanced to anticipate to the trends and to develop the local community (beneficiaries)					
Technology / Resources	**«know-how»**: resources (including knowledge, skills, finance, technological facilities, partnerships) needed to develop to support the above systems					

Figure 3 Template of Roadmapping used in the project.

To produce a robust strategy the exercise should consider the drivers of change (such as Social, Technological, Economic, Ecological, Political). Considering them helped to identify key influences and events that have led to the current situation, the key aspect of current situation, and the coming changes that can affect the feasibility or appropriateness of supposed interventions.
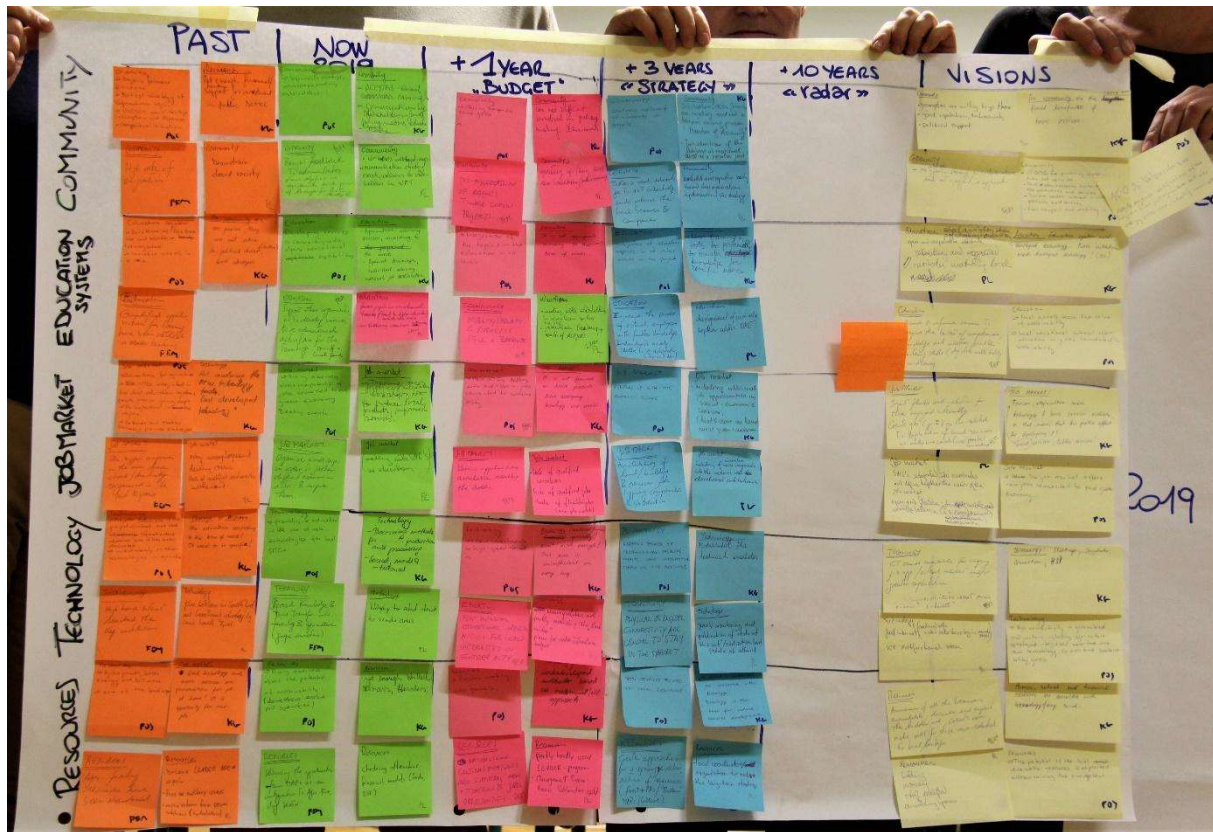
Figure 4 The road map developed by the partners.

Partners developed a partial but rather interesting Roadmapping (only up to the 3-year "strategy horizon"). Here are some of the main interesting points:

- Community:
  - ✓ Past: shared problems of brain drain (except for PoP) and some frailties (passive attitude of locals);
  - ✓ Now (2019): meetings and events to inform and engage the local community on raising awareness about its strength and weakness points, reporting the findings and learnings from ALPJOBS project;
  - ✓ 1-year horizon: interventions to share common goals in common territorial projects;
  - ✓ 3-year horizon: promotion of tangible and collective benefits from local establishment of ICT (fast internet and related services) along with valorisation of local "treasures" and business, also lobbying at upper level of governance (national or regional);
  - ✓ Visions: youngsters are willing to remain, the remote areas have good reputation and testimonials, with political support for the local public services, while the local SMEs provides innovative services and products (for local tourism, residents) and are well connected with education institutions.

- Education
  - ✓ Past: some positive bases (qualified opportunities for local training and innovation), with some obstacles to innovation (scarce resources, not/low skilled teachers, too generic training);

- ✓ Now (2019): support to organization of training courses / courses that connect with local stakeholders and create partnerships with pan-alpine educational institutions;
- ✓ 1-year horizon: meeting with stakeholders in education sectors, sharing the ALPJOBS roadmap, integration of local topics within the local education at all levels;
- ✓ 3-year horizon: Increase the capabilities of actual employees, increasing curricula together with SME, by new trainings and by technology and knowledge transfer from sustainability research;
- ✓ Visions: educational institutions benefit from advanced technology and promote sustainability approach in cooperation with local business and other institutions.

- ● Job market
  - ✓ Past: some positive premises (local projects established and succeed; improvement in transports increased job opportunities and mobility of workers), but some issues (local firms closed or moved outside the area; loss of qualified workers);
  - ✓ Now (2019): meetings and events to raise awareness about the potential of green jobs, to gather different actors/sectors towards common long-period perspectives and synergies by local products/productions;
  - ✓ 1-year horizon: support to the establishment of new SMEs offering qualified jobs connected to sustainability;
  - ✓ 3-year horizon: meetings and events to raise awareness (as above), support to additional services and related jobs (healthcare, rural green tourism, network of educational institutions);
  - ✓ Visions: new job opportunities related to green economy (agriculture, services and tourism) are sustained, with flexible conditions, also involving external employees and a good work-life balance.

- ● Technology
  - ✓ Past: new technologies (e.g. investments in agriculture, broadband internet) have arrived but not many innovations yet, mobility is still la barrier;
  - ✓ Now (2019): initiative to provide education on the use of new technologies in forestry and agriculture, lobbying to extend the internet in remote areas, trainings on the use of social media for promotion;
  - ✓ 1-year horizon: new investments on broadband internet (or on the training on using it);
  - ✓ 3-year horizon: investments on local technological development and its integration in the local activities (local "technological incubators");
  - ✓ Visions: high connectivity is guaranteed and included in innovative services and activities to achieve sustainability goals and "urban standards" in public services.

- ● Resources
  - ✓ Past: renewable energy and resources are common (e.g. hydro-electricity, timber), landscape value is recognised;
  - ✓ Now (2019): activities to raise awareness about the potential of sustainable processes/products and local treasures, integrating perspectives and sectors; checking alternative financial models and funds;
  - ✓ 1-year horizon: investments in restructuring / innovation of traditional products and resources;

- ✓ 3-year horizon: new training on local resources and potential synergies between them; local coordinators promote a long-term strategy on the use and management of natural resources;
- ✓ Visions: built and natural environment (and a common awareness of all "treasures") provides the bases for local prosperity for local communities and actors within sustainability perspective, with qualified staffs, co-working spaces and wide collaborations.

3. Outputs of local exercises on Backcasting (WP 4.2)

Backcasting workshops involved a total 35 of local stakeholders, 15 women and 20 men, with an average age of about 40. The participatory sessions conducted by PPs were in the period February-April 2019 and, in most of cases, lasted about 2.5-3 hours each. All the sessions had the same setting: the desirable future referred to the year 2030, the steps of "promising conditions" were set in 2026 and 2022. To conduct the session, a set of presentation slides and step-by-step instructions were provided to the PPs (see Guidelines).

The **desirable futures at 2030**, as shared by the involved stakeholders, generally focus on the following issues:

- vocational education for young adults and attractive jobs for qualified workers;
- innovative and green economy (nature-based and "slow tourism", local value chain);
- lively cultural and family-friendly environment with good living conditions (all this well communicated outside);
- good intercommunal or governance cooperation (for cultural events and efficient use of local resources);
- innovative and advanced infrastructures for mobility and public services.

Where the groups expressed more thematic areas about the desirable future, they implemented the Backcasting for the all the areas, in some cases separately along distinguished tracks.

The **promising conditions in 2026**, according to the groups, included:

- training and development programs in collaboration with local companies and research centres (creating jobs for academics);
- improved infrastructure and plans in the area of roads, local resources, internet and residential buildings;
- cooperation and clustering of production and services (from healthcare to outdoor activities), possibly with new local companies;
- integrated investments on local business models, online presence, eco-tourism and targeted subsidies (e.g. for flats and houses dedicated to young families);
- local politicians and public administrators intensively interact with their counterparts in the surrounding municipalities, so that inter-municipal cooperation has become ordinary.

Many of the identified **possible obstacles between promising 2026 and the expected 2030** are common across workshops, such as:

- outdated school institutions and buildings not attracting skilled teachers or trainers;
- small businesses are not willing to integrate their model with green and local economy, or are too small to develop and innovate, they lack connection to supra-regional (innovation) facilities;
- lack of funding for kindergartens, all day schools and retirement homes, the interests of local authorities are not consistent with local residents' ones (priorities are on cities only not on rural areas);
- non-existent awareness about the importance of quality in green and local products, myopic prioritization of cheap prices over green economy;

- old-fashioned and non-malleable model of tourism is losing the competition with more developed adjacent areas.

The **possible actions mitigating or preventing the obstacles 2026-2030**, includes the following:

- participatory workshops with people, educational institutions and businesses on how to develop long-life training opportunities in collaboration and how to improve cross-contamination of knowledge of students and alumni or other future workers/entrepreneurs (including exchange of trainers/teachers among different TEVs and facilitated conditions for them to find a local accommodation, possibly with their family);
- promote the commitment of locals (e.g. by co-ownership) to support all member of community (including the younger) in their activity for innovative promotion of and for the area, including collaboration in promotional events of local products and "treasures" (in which all participants to the "smart village" are shareholders of profits and benefits);
- workshops between different businesses in order to create/reinforce synergies and better working conditions (e.g. sharing services as kindergarten and other family care support) and to attract qualified workers (including promotion of healthcare services);
- foster collaboration and communication among entrepreneurs by providing grants for innovation activities and by investing in infrastructure and platforms for communication, as well as in "territorial facilitators", including the provision of information on best practice examples from other comparable remote areas, promoting intercommunal collaboration.

The **promising conditions in 2022** (to have the expected 2026), according to the groups, include:

- education for technologically advanced and organic food production is well established and adequately subsidized, (new) trainings for local actors and young people include energy efficiency, energy self – production, innovative approaches to healthy lifestyle, environment and agriculture;
- intercommunal cooperation and mutual benefit have been recognised, one municipality compensates the weaknesses of others (community tasks are done jointly: tourism promotion, outdoor activities, wastewater, winter road maintenance and childcare are organised on an inter communal level rather than on single village level);
- renovated or improved built environments (urban areas) have a high potential in terms of quality of life and tourist use, supported by attractive landscapes and outdoor activities;
- integrated and cross sectoral promoters of territory (agri-food and craft products, certification of local processes of food production) have convergent communication channel and long-term objectives, linked to territorial didactics, while territorial consortium (with dedicated facilities) collects, stores local raw and processed products of agri-food value chain (this may include cooperatives, shops, app, documentaries).

The **possible obstacles between the imagined 2022 and the expected** 2026, as expressed in the workshops, seem mainly consisting of:

- mismatching of visions and interests: mass tourism may be preferred instead of more sustainable and niche markets, or actors may not agree with projects of regeneration and valorisation of historic centres or other local treasures, the investors' interest might not be compatible with the community's one;
- the local initiatives can be not effective: the marketing may be poorly structured and not working, the public transport/urban open space/walking or cycling paths may be not attractive for the residents and tourists, the necessary resources may not be adequate: the local supply of jobs may not attract qualified people, the demand for local products may be too high, stressing the production capacity of the area.

The **possible actions mitigating or preventing the obstacles 2022-2026**, can be resumed as it follows:

- multifunctional concepts and visions of urban open spaces and their uses, including the surrounding municipalities in local development (e.g. coherent with architectural history and local traditions or agreeing alternatives);
- improvement of negotiation capability and strategic thinking within the community, even hiring facilitators of change and of "intercommunal" thinking, working to help participation, communication and synergies among sectors and actors with integrative and future oriented perspective (new trainings and new jobs from that?);
- learning together (among different sectors, different generations): from experts and experiences from other areas (by active involvement of young people), from "open" local companies (inviting local young people and their families to visit).

Figure 5 Examples of Backcasting timelines developed by two partners in their local exercise.

For all gathered information see the file of "Report on local Backcasting exercise" elaborated by each PP in the ALPJOBS web site https://eventi.fmach.it/alpjobs.

4. Outputs of local exercise on Roadmapping (WP 4.3)

Roadmapping workshops conducted by PPs involved a total 44 of local stakeholders, 17 women and 27 men, with an average age of about 38. These participatory sessions were in the period February-June 2019, taking approximately the same time of Backcasting exercise, about 3 hours. All the sessions had the same template, including 5 sub-systems and 6 temporal references (as described above). A set of presentation slides and step-by-step instructions were provided to the PPs (see Guidelines).

A large number of detailed ideas and suggestions have emerged, almost all specific and concerning the territorial realities of the PPs; therefore, only a small selection of the most common is given below.

- Community:
  - ✓ <u>Visions</u>: youngsters and young families are willing to remain; institutions collaborate (with "territorial facilitators") in long-term projects on local value chains and services, sustained by local firms and social innovation (e.g. sharing spaces, co-housing);
  - ✓ <u>Past</u>: realization of infrastructures promoted local development; festivals strengthened the local offer (products, art); collaborative attitude is not always common between neighbours; low interest in rural areas with some traditional uses and practices that are locally maintained but not always appreciated or supported;
  - ✓ <u>Now (2019)</u>: the landscape is enhanced and maintained; politicians have often restricted visions (short-termism); lacking or scarce social cohesion; scarce opportunities for young people to meet peers or to find own accommodation, scarce or decreasing public services (healthcare);
  - ✓ <u>1-year horizon</u>: improvements of roads and/or timing of the buses between the municipalities; strategic plans connecting local people and small entrepreneurs (e.g. local market for connecting local people on weekends, subsidies for landscape maintenance or enhancement);
  - ✓ <u>3-year horizon</u>: vacant building at a reduced rate, day-care centre for children and health services guaranteed; permanent exhibitions (or combined fairs) about the local treasures and involving local enterprises,
  - ✓ <u>5-year horizon</u>: Close cooperation between the municipalities (fusion?) and between local associations, within an active cultural centre.

- Education:
  - ✓ <u>Visions</u>: innovative education / training services are established and in continuous development, focusing on local treasures (to share and spread "a narrative of territory"), sustainability practices and cross-sector collaborations;
  - ✓ <u>Past</u>: some renovation of local school buildings, but the local education system, when not in decline, has at least been stable for many years;
  - ✓ <u>Now (2019)</u>: decreasing number of pupils and students, education opportunities not adequate (not interdisciplinary, not practical, not technologically updated);
  - ✓ <u>1-year horizon</u>: improves the current initiatives on sustainability and healthy food chain (including educational tours and workshops at farms and in the territory, in collaboration with other schools); internships for students at different levels are organized with local companies;

✓ **5-year horizon**: establishment of boarding school with a focus on mathematics and chemistry, tourism or healthcare, or a Summer School on "slow tourism" for both operators and students; a study about the necessity of new jobs/curricula in the local vocational options is carried out; cross-border and regional school exchanges;

- Job market:
  ✓ **Visions**: new jobs emerge around new services and local value chains (e.g. "digital territorial animator", "local geolocation manager"), most of these are "smart green jobs", intersectoral collaboration is common, profitable and attracts qualified people;
  ✓ **Past**: some important employer closed; some others are established with uncertain future; generally the PPs areas are at periphery of other more developed areas (and with lower resources);
  ✓ **Now (2019)**: most of jobs are in agriculture (including forestry) and tourism, with smaller contribution from crafts-SME and public services; many of these jobs are under pressure due to digitalization, centralization and structural changes;
  ✓ **1-year horizon**: free broadband WIFI at central places to support tourism and small businesses; (improvement or) organization of territorial marketing within strategic projects (coordinated and integrated with the help of new available tools, including business incubators); checking of hiking trails (and their recovery or improvement);
  ✓ **3-year horizon**: Creation of shared offices in former empty buildings for start-ups and self-employed people; creation or promotion of outdoor activities (e.g. horseback riding; support and dissemination of teleworking;
  ✓ **5-year horizon**: promotion of work at home or remote work (e.g. eco farmers) and creative jobs (concerning related services and digitalization), creation of common/municipal tools or productive structures (e.g. sawmill), Investment in women's work (e.g. in the wood sector).

- Technology:
  ✓ **Visions**: new local products/production processes are possible and cheap, local firms are capable to benefit from digitization and new web-based services
  ✓ **Past**: touristic and transport infrastructure established (with also contrasting decisions taken, such as against the merging of skiing resorts), mobile/data/web connection not still easy;
  ✓ **Now (2019)**: Broadband Internet is now available; generally, public transport (bus or train) connections are poor; for other aspects the conditions are the same as in the last 5-10 years;
  ✓ **1-year horizon**: organized pressure by citizens for improving infrastructures, transport and internet connections; request of funds to integrate GPS tracks of local routes in the existing APPs/web-social channels (experiential territorial marketing); improvement in networks/WEB sites;
  ✓ **3-year horizon**: High speed internet (5G); bike trails, hiking trails, heritage building are renovating; bus lines are better connected to the urban areas; E-shop for local

food and crafts is recognised; (new jobs such as) "local agri-APP developer" and updater, "territorial digital promoter" of hiking trails and events;

- ✓ 5-year horizon: public transport has been electrified, generally, mobility and heating are "green"; Apps for local touristic valorization are well-known; Websites of local firms and farms join forces in network and APPs.

- ● Resources:
  - ✓ Visions: the level of public services and public funding is the same as in urban areas (cities); technologically advanced and world connected "smart village" with ITC, app supporting system, data-agro-lab, eco-friendly digitalization but also with an identity and proper originality; Local natural resources are enhanced and historical heritage is preserved;
  - ✓ Past: local natural resources derived from long historical traditions and practices (including renewable energy sources);
  - ✓ Now (2019): not changed situation (the same resources as in the past); in general, the municipalities are overwhelmed with expenditure in social sector and bureaucracy; farmers have adequate subsidies and financial support through EU projects;
  - ✓ 1-year horizon: supporting to biomass energy and efficiency; promotion of new agro products and tourism services (also in collaboration with local primary and vocational school for design); search for subsidies or EU funds for building renovations and improvement of roads / paths;
  - ✓ 3-year horizon: energy self-sufficiency launched; E-shop for local food and crafts is established and valorised by a territory brand; new infrastructures in construction; local innovations are supported by a local "commission for innovation";
  - ✓ 5-year horizon: energy self-sufficiency established; collaboration project and heterogeneous actors' groups successfully operate and develop; a forestry/agricultural study centre provides consultations and support to local operators, in addition to research; essential services for the family are maintained and partially self-sustained; cycle/pedestrian connections between villages helps the promotion of local brand also outside the territory.

	Passato	Adesso 2019	Breve termine +1 anno «budget»	Medio termine +3 anni «strategia»	Lungo termine +5 anni "radar"	Vision 2030
Formazione	• Creazione istituto forestale di Feltre ('70) • Specializzazione certificazione e aggiornamento macchine • Cresce sensibilità alla sicurezza sul lavoro • Declino della conoscenza del territorio (scuola media/elem. tolta geografia locale)	("come il precedente")	• Organizzazione corsi per utilizzo motosega e corsi di sicurezza nel lavoro (forestale) • Dépliant o piccolo manuale sicurezza sul lavoro (forestale) • Viaggi di istruzione nel territorio tipo "progetto montagna" + stage presso imprese locali a diversi livelli (superiori)	• Formazione informativa sugli strumenti tecnologici (APP/GIS) offerti da enti e già esistenti • Formazione per gli operatori sulla promozione digitale del territorio • Proporre studio del territorio nelle scuole locali (anche nel dopo scuola), collaborazione tra scuole e residenti/enti locali	• Delocalizzazione (da Trento o altri centri) dei corsi di formazione (es. apparecchiature forestali, APP GIS,) in Tesino • Scuola estiva residenziale (tipo "il sussurro della Montagna"), x docenti, x studenti, anche da fuori • Scuola estiva per operatori di turismo lento e valorizzazione del territorio "usanze e tradizioni"	• Enti di formazione (PAT-CdV, Associazioni, FEM) propongono in zona formazione specifica x boscaioli, x artigiani (tipo "alta scuola del legno") • Offerta di formazione sull'ospitalità, sull'imprenditorialità tipo "accademia di impresa" (famigliare) in coll. con Camera Commercio con corsi locali (non a Trento) • Offerta una Formazione gestita da locali sulla "narrazione del territorio" (con scuole + ecomuseo)
Comunità	• (Regole com.) assegnazione legname come premio natalità • assegnazione a prezzo agevolato legname per costruzione/ristrutturazione 1° casa • Calo dei giovani (emigrazione)	("come il precedente")	• Campagna di sensibilizzazione sia sull'utilizzo che sul consumo di legname (locale) • Tavolo operatori turistici (coordinato da/con APT?)	• Organizzazione e promozione mostra permanente tipo "luci ed ombre del legno" • Asta delle opere del Simposio Legno • Rafforzamento Pro Loco in funzione di coordinamento di progetti sul territorio	• Creazione APT del Tesino • Unione delle Pro Loco • Unione dei comuni	• Comuni e aziende private con vendita legname e trasformazione fanno utile, hanno mercato regionale, un marchio riconosciuto a livello nazionale • Attori, gestori, guide ed enti collaborano con una regia o un facilitatore di coordinamento
Mercato del lavoro	• Simposio/premio del legno (comitato invita scultori internazionali) • Aumento costo di inizio attività, attrezzature e loro manutenzione • Inizia richiesta "turismo lento" e spirito di iniziativa private	• Meno operatori in generale, ma più professionali (più specializzati e formati) e meno autodidatti • Concorrenza dall'estero • Offerta "vecchiotta"	• Riordino fondiario e lottizzazione del legname cadute 30 ottobre 2018 • Verificare percorribilità sentieri e ripristinarla (nuova professione: tracker?)	• PA incentivi e strategie per le forniture "locali" per aziende private • Concludere lavori (urbanistici) avviati	• investimento nel lavoro femminile settore legno (amministrativo, commerciale, promozionale) • Creazione segheria comune/comunale • nuovi imprenditori migliore offerta di prodotti agricoli e turistici	• Crescono figure professionali aggiornate del Boscaiolo, Falegname, operatori nelle costruzioni e produzione pellet (e altri prodotti legnosi) • Nuove figure professionali "Facilitatore di collaborazione" e "Animatore digitale territoriale"
Tecnologia	• Nuove teleferiche per trasporto legname • Smartphone e APP/web per promozione e accesso alle info turistiche	("come il precedente")	• Destinare fondi per integrare tracce GPS dei percorsi locali nelle APP/reti social/siti WEB esistenti	• Potenziamento linee wireless e copertura internet • Sviluppatore e aggiornatore di APP, Percorsi, Eventi per Promozione Digitale	• Rete di siti e di APP	• Lavorazione e trasformazione del legno sono locali • Il territorio e i suoi percorsi sono promossi efficacemente sui nuovi canali social, su un portale web (?)
Risorse	• Aumento della superficie boschiva • Nascita ecomuseo (tentativo di collaborazione)	("come il precedente")	• Pulizia boschiva (dopo maltempo 2018) • Destinare fondi per sistemazione dei paesi/demolizioni • Supporto alle domande di finanziamento per ristrutturazioni e percorsi	• Valorizzazione dei prodotti locali "marchio Tesino" e sviluppo dell'agricoltura • Informazione su possibili contributi "Tesino bio" (favorire la produzione bio)	• Creazione centro studi forestale/agrario che oltre a ricerca fornisca consulenza operatori locali • mantenimento e sviluppo servizi essenziali per la famiglia • Creare collegamenti ciclabili/pedonali tra paesi • Promozione del marchio anche all'esterno del territorio	• Risorsa legno locale (abete, faggio, larice) è valorizzata e mantenuta • Territorio è conservato: centri storici sono conservati, con malghe alpeggi musei + enti locali funzionanti con la collaborazione di guide del territorio, accompagnatori, gestori strutture

Figure 6 Roadmapping matrix from local exercise by FEM.

Figure 7 Roadmapping matrix from local exercise by PoP.

	Passato	Adesso 2019	Breve termine +1 anno «budget»	Medio termine +3 anni «strategia»	Lungo termine +5 anni "radar"	Vision 2030
Formazione	Pochi cambiamenti nei programmi scolastici. Scuola poco dinamica	Piano studi 21. Cambiamenti repentini. Digitalizzazione	IUFFP effettua un "digi-check", un'analisi delle competenze digitali della scuola professionale. Formazione per insegnanti nella digitalizzazione. Collaborazione con altre scuole	Sviluppo di un progetto per la creazione di una scuola bilingue. Avere personale qualificato con conoscenze locali. Possibilità per gli studenti di fare degli interscambi. Implementare la digitalizzazione nelle classi	Implementazione del progetto scuola bilingue e valutazione sull'efficacia. Sviluppo nella formazione degli apprendisti (per nuove professioni). Attualizzazione dei piani di studio. Ottenimento di diplomi professionali bilingue. Collaborazione fra scuole e aziende	Formazione equiparata ai centri urbani
Comunità	Alluvione. Paesaggio rurale culturale. Economia di frontiera. Consorzio e cooperative. Ferrovia retica e Forze Motrici. Bonifica fondiaria. Turismo	Infrastrutture comunali e sanitarie in buono stato (qualità di vita). Paesaggio curato e attrattivo. Sfruttamento parziale delle risorse. Crisi energetica. Turismo di passaggio	Creazione del concetto per l'anziano. Implementare sistemi informatici a livello amministrativo. L'associazione 100% Valposchiavo crea un posto di lavoro. Le problematiche dei rifiuti sono risolte. Più cura del paesaggio (Associazione Terre nostra)	Sviluppare una nuova pianificazione locale. Creare un impianto Biogas. Garantire l'esistenza di un centro medico/sanitario	Fusione dei due comuni o ripartizione dei posti di lavoro. Consolidamento delle misure ecologiche e paesaggistiche. Migliorare le condizioni quadro del lavoro. Creazione di un centro culturale	Mantenere l'identità culturale montana e di confine locale. Mantenere posti di lavoro attuali ampliando l'offerta lavorativa di qualità e di nicchia. Mantenere la qualità di vita ed il paesaggio
Mercato del...	Mantenimento della professione imparata. Professioni prevalentemente artigianali	Digitalizzazione. Mancanza di apprendisti nelle aziende locali. Sbocco verso l'Engadina per le aziende valligiane. Perdita di posti di lavoro causa cambiamenti strutturali. Pochi lavori part-time	Nuovo posto di lavoro nel progetto 100% Valposchiavo. Nuovo posto di lavoro per lo sviluppo del territorio nella regione Bernina	Possibilità di lavorare a distanza. Decentralizzare i servizi. Evoluzione nel ramo alberghiero (avere più giovani albergatori). Proposte di lavori part-time nel settore artigianale	Nuove professioni nella digitalizzazione sono disponibili sul territorio. Aggiornamento professionale diversificato. Lavori nel settore pubblico a distanza	Creare maggiori opportunità lavorative (cambi di professioni più facili)
Tecnologia	Risorse idriche. Ferrovia	Mobilità e riscaldamento edifici con combustibili fossili. Ritardo nello sviluppo della connettività	Studio di fattibilità su come valorizzare gli scarti organici (impianto biogas). Sollecitare i fornitori di servizi internet a fornire prestazioni concorrenziali (fatto dai comuni)	La connessione 5G è una realtà. Creazione di soluzioni finanziabili per lo stoccaggio dell'energia	Realizzazione del progetto lago bianco. Frenare la centralizzazione dei servizi	Produzione e consumo a ciclo chiuso. Miglior sfruttamento dell'energia rinnovabile locale
Risorse	Interculturalità (nord-sud). Risorse umane (intraprendenza). Natura e paesaggio. Risorse agricole e boschive	Agricoltura quasi completamente biologica	Migliorare gli impianti energetici inefficienti. Creare una formazione per i metodi di lavoro a distanza. Creare le linee guida per la pianificazione locale	Creazione di una commissione per l'innovazione. Creazione di un fondo per studi di fattibilità per progetti sostenibili	Flessibilizzazione dei modelli di lavoro. Favorire i posti di lavoro part-time	Pianificazione locale idonea alla valorizzazione della filiera. Implementazione di metodi di coltivazione biodinamici. Mantenimento e miglioramento della qualità di vita locale

Figure 8 Roadmapping matrix from local exercise by KGZB.

	Preteklost	Sedajnost 2019	Kratkoročno +1	Srednjeročno +3	Dolgoročni cilj +5	CILJ / VIZIJA 2030
Skupnost	-Skupnost ni povezana -zaničevalen odnos do ljudi iz podeželja, premalo projektov v preteklosti -neorganiziranost	-skupnost se ne povezuje -zavist -premalo vključena skupnost -nastajajo organizacijske skupine za malde	-formiranje poučne kmetije, društva, lokalne organizacije -vrtci, šole na podeželju -skupina združenje kmetij -občinska podpora k nakupu nepremičnin -ozaveščanje	-vključevanje zavoda in inštituta Koncert -organizacija, ki omogoča delo ter eko kmetije -kulturna društva povezujejo -organizacija športno-družabno-zabavnih dogodkov, prireditev -razvoj infrastrukture	-regijsko povezanost kmetij z enakimi -skupna kuhinja, ki povezuje skupnost in kmete -pridobiva prepoznavnost kot "pametna zelena vas" -medkulturno, medgeneracijsko sožitje	-finančna podpora za prisilevanje mladih na območje -skupnost deluje kot eno veliko podjetje, za razvoj zelene pametne vasi - medkulturni in medgeneracijski sožitje; - vzpostavljen je skupni prostor za kuhinjo; - lokalna skupnost »diha s podeželjem«; - lokalna politika upošteva prebivalce;
Izobraževanje	-centralizacija -šibko izobraževanje -pomanjkanje informacij	-e-izobraževanje -centralizacija -tema zdravega načina življenja	-razvoj e-izobraževanja -delavnice, krožki, primeri dobrih praks, razvoj novih idej -vključene okoljske teme (form., neform.) -poletne šole na kmetijah	- KGZMB sodeluje z ZRSZ za izobraževanje v tej smeri - razvije se predmet v osnovni šoli "zdrava narava" -poletna šola na kmetijah	-ekskurzije v tujino (dobre prakse) -štipendije za poklice (kmetijstvo-turizem) -eko tehnologija vključena v izobraževanje -delavnice na kmetiji -šolstvo je prilagojeno trgu dela	-šolstvo, ki sledi potrebam trga dela (trajnostni in tehnološki razvoj) -Neformalno izobraževanje na nivoju -podpora s štipendijami -izmenjave -KGZMB se povezuje z ZRSZ -študij od doma
Trg dela	-ni delovnih mest -industrijsko razvito območje -pospeševanje eko trga dela -na kmetiji en del dela, drug ostaja doma -nižji dohodki na podeželju	-Zakonodaja opočasnjuje ali preprečuje razvoj -večja specializacija v določene panoge -turizem se prebuja -še vedno premalo delovnih mest -prepoznamo eko produkte -beg možganov	-mladim možnost prevzema kmetije (tudi finančna Podpora) -otvoritev nove kmečke eko lokalne prodajalne -spodbujanje dopolnilne dejavnosti -dodatno izobraževanje za nova delovna mesta oz. prekvalifikacija	-KGZMB sodeluje z ZRSZ za zaposlovanje delavcev, praktikantov, dodatna pomoč (izobraževanje) -Marketinška pisarna zaposli vsaj dve osebi Dreisiebner srček uspešno promovira poroke + sodelovanje organizacija	-potrebe zaposlitve se povečujejo zaradi uspešnega marketinga -veterinarska klinika zaposli vsaj dve osebi Projektna in marketinška pisarna za to območje zaposli vsaj štiri osebe	-Krožno gospodarstvo, ki zagotavlja delovna mesta za lokalno kmetovanje - lokalno porabo (zlasti hrano), lokalno recikliranje (izmajdba izdelkov za turiste), krožni izobraževalni sistem - medicinska sestra, vzgojitelj, tutorstvo doma; - lokalno preskrbljena lokalna hrana za domačine; - povezovanje starejših s kmeti za boljšo delovno podporo; - KGZMB sodeluje z Inštitutom za zaposlovanje in zagotavljanjem neformalnega izobraževanja in usposabljanja o trajnostnem kmetijstvu, zagotavljanju delovnih mest in pripravi udeležencev za potrebe trga dela.
Tehnologija	-zastarela tehnologija - slaba opremljenost - nečrpanje eu sredstev za razvoj	-Zakonodaja opočasnjuje ali preprečuje razvoj	-skupnost pritiska na občino za razvoj interneta -podpisi za internet so podpisani -infrastruktura se začne že razvijat	-razvoj infrastrukture -IKT, HIŠ 70% pokritost -Tehnologija za potrebe eko kmetij -javni prevoz urejen, boljša povezanost -e-trgovina že deluje	-investicije v spodbujanje elektrike iz obnovljivih virov energije -IKTin HIŠ je že vzpostavljen na tem območju -polnilne naprave za električne avtomobile -skupna energija (ogrevanje in elektrika) -spletna stran – spletna prodaja -app Podpora za turistične točke je pripravljena za uporabo	-Tehnološko napredna eko vas (HSI, IKT, Kmetije nadgrajene z robotizacija, s sodobnimi, tehnološkimi rešitvami. -urejena infrastruktura, javni prevoz, obnovljena stavna dediščina, športni center, kolesarska, pohodna pot -digitalna obdelava podatkov, app podpora
Viri	-veliko naravnih virov -neizkoriščeni eu viri za razvoj kulturne dediščine, potenciala na tem območju -tradicija -subvencija za nakup strojev	-ciljno usmerjene kmetije -več možnosti financiranja -veliko javnih razpisov za razvoj virov	- finančna podpora -animacija terena z namenom skupnega razvoja -projektno delo, rapisi -občina podpre kulturno dediščino	-možnost subvencije za nakup strojev -podpora razvoju starih kmetij -nižji dohodki in s tem skromnejše življenje -veliko bogatih naravnih virov, -tradicija	-finančna pomoč za mlade pri razvoju podjetja, družine -zdravo bivalno, delovnega okolja -projektne skupine, občine, društva	Okolju prijazne lokalne ekološke hrane, obrtni izdelki; - tematski dogodki (vinska cesta / festival, eko trznica, tradicionalna odprta kuhinja na sodobnem festivalu) v sodelovanju z mestom Maribor, z drugimi regijami in samostojnimi dogodki.

For all gathered information see the file of "Report on local Roadmapping exercise" elaborated by each PP in the ALPJOBS web site https://eventi.fmach.it/alpjobs.

5. Notes

5.1. On the learning process

5.1.1. During the training seminar PPs

In the training seminar, the PPs were introduced to the Backcasting method through a practical exercise, in which they partially developed one, defining the desirable future at 2030, the promising conditions at 2026, the related possible obstacles between 2026 and 2030 and the anticipatory actions. Despite the limited time (less the 3 hours), the partners produced interesting ideas and detailed proposals (see §2.1), showing that they understood the backcasting mechanism well.

Similarly, the experimentation of roadmapping also gave good results during the seminar, despite some more difficulties. The greatest difficulty is due to the greater wealth of information required by the instrument itself, here adapted through an original template calibrated for the project and the application realities.

The development of roadmapping requires an effort of precision, albeit qualitative and visionary, to define logic and progressive sequences of possible interventions and decisions of the organization that develops it, in different sub-systems. This implies that the proposals should be internally coherent and structured in a logical evolutionary progression: results that are distant in time must "emerge naturally" from the imagined pre-conditions and be influenced by the organization's capacity for action. The development of roadmapping can be considered the most sophisticated and complex, together with the development of strategic scenarios (only partially developed), among those tested in the entire ALPJOBS project.

All the participants found that the Backcasting exercise educational and very useful for visualizing the long-tern goals and need path of actions towards them. Here some of their comments: "*both exercises were engaging and structured in a way that captivated our thinking and planning. Either via analyzing the end vision (backcasting) or by building it (roadmapping) we learned important elements in implementation and deconstruction of projects. These two methods are essential when dealing with project work and successful application of either of these methods is paramount to a well-developed and realized vision.*
Our impression is that the backcasting method might be more useful to the work we are doing. This is not to say that the roadmapping method does not have its place in project work, it just means that the type of work that we do is more suited for backcasting, since it contains a number of complex solutions which we must first analyze and deconstruct and in this sense backcasting provides us with all the essential tools".

5.1.2. In the local replication

In the local applications of the two methods the difficulties mentioned above were amplified. The stakeholders attending the local workshops had some difficulty imagining their desired future conditions and then sharing and articulating them; this challenge has been a constant reminder to the participants that on the way to the main objective the definition of smaller but specific objectives (or steps) help to reach it and open the way,

even without real forecasts. The identification of possible obstacles and actions for their mitigation was also important for the realization of the desired future.

In general, PPs performed a detailed and internally coherent backcasting, with many interesting points of potential applicability. In the roadmapping the applications were less defined and coherent. On the other hand, all we were aware of the experimental nature of their application, which would require facilitation skills and some background in futures studies. The "errors" described below are not the properly "fault" of the PPs but of the lack of previous experience.

The "mistakes" in roadmapping exercises are common in the first experimental applications, and include:

- confusion between the conditions that could occur and are expected and the pro-active interventions and decisions the organization might realize (this distinguishes backcasting from roadmapping): e.g. "*Municipal structural reform* ", it can occur but it is not clearly related to any Partner's decisions, the same for" *Incentives by public bodies and strategies for local supplies*" (is it the outcome of some specific strategy or simply an expected event?), similarly "*developing of infrastructure is continuing*", "*strengthening of wireless internet coverage*";

- lack of operational details or vagueness of the definitions: e.g. "*art festival*" (which kind of art can be most relevant for the local area?), or "*collaboration of educational institutions*" (which kind of collaboration and between which specific institutes?), or "*The direct experience of these natural disasters has left traces in communal memory*" (what does it mean for the resource subsystem?), or "*good services"* (what would be a threshold for a "good" level of services and for what or for whom?);

- lack of internal coherence: expected results are not logically (or not clearly) related to a progressive development of interventions or decisions; for example, "*the railway has been electrified*" (5-year long-term strategy for technology sub-system) seem to be promoted by "*high speed internet (5G)*" (3-year medium-term strategy for technology sub-system);

- most of roadmapping exercises (by all PPs) has some repetitions between time horizons or lacking definitions (replaced by "as the previous" or "as above") where past or the present and the future seem equal.

All these limits were largely predictable, due to the conditions of the experiment: the local actors were involved on a voluntary basis and, in general, without any previous preparation on the methods; the participatory laboratory was very limited in time to develop exercises that generally require a day (or two half days), most interested parties lack an agency or power of action regarding the different choices and strategies.

Despite these common limitations, important differences emerged between the results, probably due to the time dedicated on the participatory sessions: in a case, both the exercises of backcasting and roadmapping were developed in about 2 hours, in another each exercises lasted more than 3 hours.

5.2. On the results

5.2.1. Common issues

The approach was new to all PPs and the stakeholders involved in the workshops; they had some difficulties identifying conditions and frames and maintaining reasoning in specific and concrete terms within each domain. As reported by the PPs, initially, the participants had the impression that the exercises were vague and did not always know what to write. During the various methodological steps, the tasks were clarified and the usefulness of the proposed approaches was recognized by most. It is a competence that slowly develops and is progressively refined, by multiple applications, along multiple projects, before being a community competence.

In terms of contents, some concerns were in common among PPs and workshop participants, such as:

● non-willingness for innovation or further investing in a local green economy;

● low awareness about the importance of sustainability and low competence in sustainability innovative solutions;

● contrast and short-term profit competition versus long-term benefits;

● delay in technological and infrastructural development and/or scarce resources for their local succeed.

Beyond the common difficulties described above and the points just reported, the exercises have led to significant results almost exclusively in the context of application, in the sense that specific elements that emerged in, for example, Poschiavo were specific and different from those in Murau or in the Kungota community. For this reason, it is not possible to summarize the results more than has already been done in the previous paragraphs (§3 and 4).

5.2.2. Strategic insights

From the concerns mentioned above, some recommendations can be extrapolated, filling the gaps on the road to desirable futures.

(i) Since especially small businesses are often not willing to innovate their business model it may help outlining new public subsidies or collaborative services specifically dedicated on support community level and cross-sector collaboration including long-life training opportunities. Youths and constructive relationships among generations are the best cure for old-fashioned and conservative mindsets. Promoting community engagement to support all members (including the youngest but not only) in their innovative activities (e.g. through co-ownership or co-creation of innovative activities) could pave the way for a "smart village" in which all will be shareholders of profits and benefits, as well as those responsible.

(ii) Raising awareness of the importance of green and local economy is important as leverage for innovation and long-term local development in which it is possible to create and sustain work positions and possibly innovative jobs. This is something that needs to be done at the community level with the support of a higher level of governance and the collaboration of educational institutions (local ones if possible).

(iii) Short-term profits go hand in hand with cheap prices and/or negative externalities (such as social and/or environmental ones). Without interrupting this cycle, the community cannot move towards a green and prosperous future. This can be addressed by cultivating long-term perspectives and a proactive ability to understand and guide changes in the community, starting with both policies and politicians; in practice it requires spreading a futures literacy in different sectors and groups of the community.

(iv) Without physical and / or digital connectivity and easily accessible services, young people will not remain in remote areas and without educated young people, the future misalignment between job offers and requests will be inevitable. The motto "the union is strength" can be a way to create new services or support alternative ones and not supported by public subsidies; collaborations between different groups and businesses can create / strengthen synergies for better working conditions (e.g. sharing of services such as day-care and other family assistance services) and, ultimately, attracting skilled workers and facilitating the maintenance of public services.

It should be noted that all these points are better detailed in the results of the backcasting and roadmapping exercises (see § 3 and §4); here it is important highlighting that they are all interconnected and interdependent. It makes no sense, for example, to resolve the point of poor connectivity and poor services through economic aid, if key agents lack understanding of coming changes and are the bearers of narrow visions of a traditional market (which may not exist in future or will be in crisis for the competition of other subjects or territories).