



SOCIAL&NATURE PROJECT

2019-1-FR01-KA202-062336

IO.1 - GUIDE OF ACTORS

NATIONAL REPORT

ENAIP FVG

ITALY-FRIULI VENEZIA GIULIA REGION

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I. Introduction

Climate change is now a **priority issue** involving science, society and politics. The scientific evidence of the extent of global warming has been increasingly consolidated in recent years, as well as the awareness that climate-changing gas emissions deriving from the use of fossil fuels and the unsustainable use of land and natural resources.

At the same time, the awareness has grown that it is necessary to **implement both global policies** to drastically reduce emissions and mitigate the increase in temperatures (mitigation), **and adaptation strategies to limit the impacts of climate change that will occur in any case.**

Milestones at the international level were the European Climate Change Adaptation Strategy of 2013 and the Paris Agreement of 2015 (in force since November 2016).

Studies of climate change and the development of mitigation and adaptation policies have also developed in Italy and the Friuli Venezia Giulia region in recent years.

In Italy:

- studies on the evidence and trends of the climate in Italy conducted by ISPRA - Higher Institute for Research and Environmental Protection - and SNPA - National System for Environmental Protection;
- the National Climate Change Adaptation Strategy (SNACC) approved in 2015 by the Ministry of the Environment and the National Climate Change Adaptation Plan (PNACC) drawn up by the Euro-Mediterranean Centre on Climate Change (CMCC), subject to public consultation in 2017.

In Friuli Venezia Giulia:

the Region entrusted ARPA FVG with the study of regional climate change and the analysis of their impacts.

The present Report is inspired by ARPA's study, based on the Driver-Pressure-State-Impact-Response (DPSIR) framework. In Friuli Venezia Giulia many information events and training initiatives took place and are still in the regional Agenda.

In summary, some of the most interesting and innovative experiences are highlighted, mentioning the actors who contributed to the implementation.



II. Guide of actors' findings

1. Already known or future impacts of climate change on its own national territories (national, regional and local) in economic, environmental and social/human terms.

➤ *Climate change in Italy*

From the beginning of the last century to today, the average temperature of the Earth has increased by 0.7 °C having severe effects on our health. When the temperature rises above 38 °C the thermal regulation capacity of our body decreases. Elderly people find it hard to endure the great heat. When the temperature rises, even by a single degree, pathogens multiply more quickly and lead to an increase in the spread of malaria, yellow fever, intestinal diarrhoea, typhoid, cholera and other pathologies. Higher temperatures, especially in winter, few drops of rain and droughts make the presence of pollen and other allergens more persistent. Allergy sufferers, asthmatics and people with cardiorespiratory problems are in difficulty.

The global changes effects have also been studied in Italy, thanks to the information collected by the National Agrometeorological Database, Hydrographic Services and the Air Force. The data show that:

TEMPERATURES

Between 1865 and 1996,

- the maximum increased by 0.6 °C in the north and by 0.8 °C in the south
- the minimum has increased by 0.4 °C in the north and by 0.7 °C in the south
- maximum and minimum temperatures have increased especially in winter

RAINS

Rains have been declining in the central-south by 1930. Between 1951 and 1996:

- it rains less, especially in winter
- rainy days decreased by 14%
- they are shorter but more intense, with a greater risk of floods and landslides
- drought increases in the north in winter, in the south in summer

SEA LEVEL

Sea level has been increasing, since 1900, by about 0.2 mm per year and recently by 0.7 mm per year

AREAS AT DESERTIFICATION RISK

47% Sicily

31.2% Sardinia

60% Puglia

54% Basilicata

Source: Vincenzo Ferrara, "Climate evolution and impacts of climate change in Italy" (summary of ENEA's contribution to Italy's Third National Communication to the UN-FCCC), ENEA, Special Global Climate Project.

GREENHOUSE EFFECT AND GLOBAL HEATING

The NATURAL greenhouse effect allows the Earth, thanks to the atmosphere, to have a temperature compatible with life. If not, the average temperature would be around 19 °C below zero!

The greenhouse effect of NON-NATURAL origin depends on the increase in the concentration of gas and compounds from human activities in the atmosphere.

The concentration of CO₂ and other greenhouse gases has increased significantly since the beginning of the Industrial Revolution. The current concentration of CO₂ in the atmosphere is the highest of the last 420 thousand years. Fluorinated and chlorinated hydrocarbons (CFCs) did not exist until the 1950s and have since spread and contributed to the growth of the greenhouse effect, causing the ozone hole.

All industrialized countries banned CFCs in 1987 with the Montreal Protocol. It is necessary to REDUCE EMISSIONS in the greenhouse gas atmosphere to control the increase in temperature.

Think about that Italian households produce around 27% of the greenhouse gas emissions produced in Italy: 18% for domestic use, 9% for transport.

ECOLOGICAL FOOTPRINT AND BIOCAPACITY

The ecological footprint measures the total area of land and sea required to produce the resources and energy that we need and to assimilate our waste. Biocapacity, on the other hand, is the actual ability of the planet to provide the resources necessary to support our lifestyle.

BIOCAPACITY OF ITALY

on average each Italian has 1.1 hectares (11,000 m²) available

ECOLOGICAL FOOTPRINT OF ITALY

on average each Italian consumes 5 hectares (50,000 m²)

We would need 4.4 "Italies"



(Source: Living Planet Report 2010, WWF)



The wounded nature rebels. We are witness, even in Friuli Venezia Giulia, of exceptional meteorological phenomena: whirlwinds, violent storms, storms and floods are natural events, but they are aggravated by incorrect and non-far-sighted management of the environment. Man intervenes with deforestation, cementing, changing the rivers flow, thus changing the balance of the territory.

And to think that an Italian law of 1992 establishes that a tree is planted for every child born.

➤ **Climate change in Friuli Venezia Giulia**

The analysis of climatic data collected by the regional network and processed by ARPA FVG-OSMER shows, as a more evident trend, the increase in the average temperature in FVG. Compared to an average annual temperature of 12.6 ° C, which was the norm in the thirty years of reference (1961-1990), significantly higher values have been reached in recent years, with the peak of 14.6 ° C in 2014.

During the period 1961-2016, the average increase in temperature was 0.3 ° C every 10 years, with a tendency to accelerate in more recent decades.

Over almost the whole region, in the spring and summer from 1961 to 2015, the rainfall trend was negative, with a consequent decrease in rainy days.

The extreme events, caused by the heating of the summer quarter, also increased, i.e. the number of days wherein the maximum temperature exceeds the 30 °C threshold and the number of nights exceeds the 20 °C.

The number of very hot days has gone from around 30 in the 1990s to almost 50 in the last five years. Similarly, the number of very hot nights (tropical nights), those in which the minimum temperature exceeds 20 °C, has also increased, from about 5 nights in the 1990s to almost 15 in the last few years.

The signal of warmer winters is readable in the trend of the number of frost days, in which the minimum temperature drops below zero.

It is also interesting to detect the cryosphere which in FVG is present in the form of 1) glaciers and glacial or glacial-wrecks; 2) permanent ice caves; 3) permafrost.

In the Julian Alps, the glacial decline over the past century, especially in the past 30 years, has been extraordinarily rapid. It is related to the change in climatic conditions, in particular to the trend of average annual summer temperatures and average annual winter rainfall



The glaciers of Mount Canin

➤XXI century future trends in FVG

According to the study of trends in FVG during the winter, there will be an average increase of 1.3 °C, in the summer instead the increase may reach 6 °C in 2100 (2.5 °C in 2050). Winter precipitation will increase, especially from the middle of the century, with an increase of 20-30% by the end of the century.

The average number of days of heatwaves per season will double in the next thirty years, while in 2071-2100 the plain will also have 40 days in the year in which summer temperatures will be at least 5 °C higher than the annual reference average.

In the future, most of the summer will be affected by heatwaves, causing serious consequences for human health, crops and livestock, on glaciers and the most vulnerable ecosystems.

A further indicator of thermal stress is the number of days on which the maximum temperature exceeds 30 °C and the number of nights on which the minimum temperature exceeds 20 °C. Hydro-climatic events, with extreme rainfall capable of causing floods and erosion, are expected to increase substantially only from 2071-2100.

The region FVG could experience an increase in temperature for the end of the 21st century up to 5 °C in winter and up to 6 °C in summer, with strong thermal stress, associated with heatwaves and the number of hot days and nights. Precipitation will increase in winter, with very intense rainfall events and decrease sharply in summer, with the region drying up in summer. As a consequence of atmospheric heating, the sea temperature of the FVG is expected to rise to 3 °C at the end of the century. The greater evaporation, due to heating

and the lower contribution of water from rainfall and rivers, leads to an increase in salinity of about 1. The pH of the sea will drop to 0.3, with consequences for the entire ecosystem. The average sea level should be over half a meter higher at the end of the century, with an impact on coastal areas.

The cryosphere of the FVG, already extremely reduced over the past century (-82% on the surface and - 96% on the volume) will contract rapidly. The Equilibrium Line Altitude (ELA), which now stands at around 2700 meters above sea level, will rise above 3000 meters around 2030, to reach 3400 meters before the end of the century.

Changes in the climate of the FVG in the "business as usual" scenario would have serious repercussions on many regional socio-economic sectors, such as water resources, agriculture, ecosystem services, health, tourism.

➤ *Impacts recognition in FVG*

The study of the impacts, starting from 2016, constituted valuable support for the preparation of a regional strategy for adaptation to climate change and mitigation actions. This is a work that connects the guidelines produced at the national level¹ with the specific features of the Friuli Venezia Giulia region, using the same articulation of the themes/sectors of impact.

We present, in the following, a survey of the impacts, focussing only on some aspects, of greater interest in the context of this project.

Quality and quantity of water resources and hydrogeological instability

As far as drinking water resources are concerned, the episodes of drought in the summer will increase with consequent lower availability of water and a general lowering of the levels of



the water table. Conflicts will increase due to the use of an increasingly reduced and poor quality resource. The intensification of the frequency and duration of dry periods, moreover, could increase the dry periods especially of torrential waterways and therefore lead to dramatic changes in habitats and an increase in the concentration of pollutants.

The increase in thermal energy in the atmosphere will lead to floods with negative consequences both on the state of water bodies and on the ecological state of aquatic environments.

Desertification, land degradation and drought

In Friuli Venezia Giulia the impacts are related to the loss of soil and the degradation phenomena that will be borne above all by the mountain belt, the Magredi, the Karst plateau, the low Friuli plain and the coastal belt, also subject to gradual salinization. The lowering level of aquifers will also favour the phenomenon.

Biodiversity and mesofauna

Soil is one of the habitats with the greatest biodiversity and population density. 1000 invertebrate species can coexist in a single square meter of beech forest, a single gram of

¹ National Climate Change Adaptation Strategy (SNACC, 2015); National Climate Change Adaptation Plan (PNACC, 2017); "Impacts, vulnerabilities and adaptation to climate change" Working Group of the National System for Environmental Protection (SNPA).

soil can host millions of individuals and hundreds of species of bacteria.

Climate change hurts soil biodiversity and fertility. The intensification of extreme events induces on the one hand erosion or leaching, which translate into a mechanical loss of the habitat, on the other prolonged drought phenomena that put a strain on its biological resistance.

Climate change and greenhouse gas emissions act negatively with other drivers of global and local change, such as the fragmentation and degradation of habitats, the invasion of alien species, pollution and changes in land use. The loss of biodiversity will have repercussions not only in the ecological, but also economic and social spheres, due for example to the worsening of water quality, the decline of pollinators, the increase in hydrogeological risk and soil degradation. Friuli Venezia Giulia will be strongly affected by the impacts in both the Mediterranean and the Alpine regions.

Marine resources



The marine environment is a precious heritage that must be safeguarded and restored to maintain biodiversity and preserve the diversity and vitality of the seas and oceans. In the regional context, the macro impacts relate to the alteration of the characteristics and chemical-physical processes and the alteration of ecological communities and trophic networks, in particular in the northern Adriatic with its lagoons. In the fisheries

sector, the consequences are evident especially for shellfish farming.

Climate changes are at the origin of several biological phenomena, such as:

- modification of habitats
- the appearance of new animal and plant species, including algal cells potentially toxic to humans, new parasites and invasive species and new alien and thermophilic indigenous species at the expense of the autochthonous component with a cold nature (see Gulf of Trieste and Laguna of Marano and Grado);
- population-based settlement of species once considered infrequent;
- generalized changes in the structure of sea flora and fauna.

Health

The increase in summer temperatures and heatwaves can add the risk of insolation, heatstroke, sunburn and erythema, but also aggravate mental and cardio-respiratory diseases, and damage from exposure to UV rays. The most exposed people are children, the elderly, people with chronic diseases and professional categories who work outdoors.

Catastrophic events such as floods also not only lead to an increase in deaths and hospitalizations for wounds, gastroenteritis or poisonings but can also cause heart attacks, cardiomyopathies and post-traumatic stress disorders. Climate change also favours the spread of infections transmitted by biological vectors, such as the tiger mosquito, the leishmaniosis and the tick.

The tiger mosquito, identified in Italy for the first time in Genoa in 1990, is capable of transmitting 22 different viruses to the fauna. These include infectious agents that are dangerous to humans, such as Dengue viruses, Chikungunya and West Nile Virus. Other mosquito species are also invading our country at a fast pace.

Ticks are expanding both in Europe and in Italy. They can become vectors of TBE tick bite encephalitis and Lyme disease borreliosis.

In Friuli Venezia Giulia the first cases of encephalitis appeared in 2003 and already in 2016.

87 cases were reported, of which 3 invalidating and 3 with a fatal outcome.

In Italy for Lyme disease The endemic centers are Veneto, Friuli Venezia Giulia and Trentino.

Forests

In the region, the wooded area occupies 300 thousand hectares, of which about 93% in the mountains and 7% in the plains. There is an extraordinary variety of forest types.



The forests of the region represent a patrimony of almost 45 million cubic meters of wood, which gives work to 11th forest companies. The impacts will, however, touch areas of interest involving different sectors: from nature conservation to the landscape, from the woodworking supply chain to tourism, from health to soil protection and the prevention of hydrogeological instability. Forest fires, in particular summer fires caused by lightning, are already a major problem in the region, which may worsen with climate change.

Agriculture and food production

A third of the regional territory is destined for agricultural or pastoral uses. Climate change will change the crop landscape and landscape of these areas. The increase in temperature will allow both the introduction of species and/or varieties typical of warmer climates and the increase in areas destined for autumn-spring instead of summer crops.

The decrease in rainfall and the lower water availability will lead to the replacement of some species with others. The greater need to resort to irrigation will lead to the abandonment of some land no longer suitable for cultivation. The agricultural productivity will decrease with an increase in production costs to restore the physical-chemical conditions of the soil. There could also be negative repercussions in the livestock sector, particularly in the livestock sector, with an increase in mortality, an increase in costs and a drop in yields. Global warming, in viticulture, causes a reduction in the production and maturation of the grapes with high alcohol levels and poor organoleptic quality.



Tourism



Tourism is a sector particularly sensitive to environmental changes triggered by climate change. The most affected types of tourism will be seaside tourism, with a reduction in space due to rising sea levels and a decrease in attractiveness due to the increase in summer temperatures and heatwaves and mountain winter tourism, which may suffer a significant impact due to the drop in snowfall.

- 2) Actors already mobilized or mobilized** at all levels (national, regional and local) to fight against the negative effects of climate change (with their precise references) and, if possible, quantified impacts.

Forum Italiano dei Movimenti per l'Acqua www.acquabenecomune.org/

The Italian Forum of Movements for Water was born in 2006. It brings together territorial committees, social organizations, unions, associations and individual citizens who fight for water for the common good, its public and participatory management in a holistic vision; or a 360 °C battle that starts from the aquifers and reaches our taps. We have chosen to fight to defend a primary common good as a paradigmatic of all common goods, within a context

in which movements and social struggles claim an alternative to the neoliberal system based on the exploitation of nature and our lives.

Banca Etica www.bancaetica.it/

Banca Etica offers a different banking experience, offers all the main banking products and services for individuals and families or organizations and businesses. It started the business in 1999, starting from the bottom, thanks to the commitment of many people and organizations who took steps to set up a credit institution inspired by Ethical Finance. The founding principles are transparency, participation, equity, efficiency, sobriety, attention to the non-economic consequences of economic actions, credit as a human right. To pursue its goals, Banca Etica has developed a Manifesto and developed various "ethical guarantee" tools to ensure the effective possibility of responsible use of money. With the savings raised, it finances organizations operating in four specific sectors: social cooperation, international cooperation, culture and environmental protection. A verifiable and public figure: Banca Etica is the only bank in Italy that displays all the loans disbursed on its website.

CeVI www.cevi.coop/

CeVI is a non-governmental organization (NGO) founded in 1984 to operate for human promotion, for fairer international relations and sustainable, equitable and respectful of global differences. It operates in the areas of education, awareness and promotion of development programs. Right from the name, the International Volunteer Center (CeVI), it was decided to focus on associations and volunteering, to build responsible participation, free and accessible to all, and on cooperation, as an opportunity for meeting and exchange mutual knowledge and values. Among the latest projects, there is "Cities and sustainable management of water and natural resources", funded by the Italian Agency for Development Cooperation - AICS. The project aims to contribute to greater knowledge and awareness of citizens regarding the 2030 Agenda by promoting changes in behaviour and active attitudes to reduce the anthropogenic impact on the environment. CEVI develops networks and promotes information campaigns, to raise awareness, empower, involve and mobilize people, groups, schools, institutions, on important issues that transversally affect international cooperation activities, educational programs, training and communication.

The Campaigns are designed and implemented in collaboration with other organizations, national and international networks to implement changes at the local and global level. The two most significant campaigns in recent years are those for raising awareness of Global Citizenship Education, the Right to Water and the Right to Food Sovereignty.



PLANT THE FUTURE! is dedicated to protecting and preserving common goods from privatizations and has launched a collection of signatures to modify article 810 of the Civil Code. Common goods are a wealth for all citizens: natural ones such as air, water, parks, but also some infrastructures or structures that risk privatization or defacement.

Laboratorio Regionale di Educazione Ambientale (LaREA) www.ea.fvg.it

The Regional Environmental Education Laboratory (LaREA) is an ARPA FVG structure that carries out its institutional activities in the context of educational processes for sustainable development. Active since 1997, LaREA joined ARPA FVG in 2000, supporting the Friuli Venezia Giulia Region in the implementation of environmental education guidelines and strategies, particularly as regards the National System of Information, Training and

Environmental Education (INFEA). LaREA deals with educational planning, teacher and educator training, design and management of educational tools (exhibitions, exhibits, etc.), experimentation with new multimedia and educational contexts. As part of the National Environmental Protection System (SNPA), it provides its contributions to the definition and development of the SNPA's educational processes.

Fridays For Future ITALIA www.fridaysforfutureitalia.it/

Fridays For Future is a global movement that recognizes the Climate Emergency and requires a safe path to stay below + 1.5°C. The requests are summarized by the acronym: FU.TU.RO!

Publish a newsletter, have a blog and work on social networks:

Instagram - @fridaysforfutureitalia; Facebook - Fridays For Future Italia; Twitter - @fffitalia;

YouTube - Fridays For Future Italia; Telegram - @fffitalia; Spotify - Playlist For Future

It has a radio channel: the Voice of Fridays For Future aired every last Friday of the month at 10 and 14 on the frequencies of LifeGate Radio!

Kallipolis <https://kallipolis.net/>

Kallipolis is a social promotion association with legal personality. Born in 2006 to improve the livability of human settlements both in Italy and abroad, with particular attention to transition and developing countries, Kallipolis recognizes itself in the United Nations Habitat Agenda goals. The association puts the most vulnerable groups at the centre of its attention, betting on the ability of urban environments, which are already the engine of the planet's development, to also become spaces of freedom and equity. Kallipolis, through his work, wants to help build cities:

- INCLUSIVE: accessible to all and attentive to the most vulnerable;
- GREEN: committed to reducing the environmental impact of the human activities that are generated in them (waste, transport, energy production, consumption of resources);
- HEALTHY: that allows every citizen to be able to lead a healthy and safe lifestyle;
- ATTRACTIONS: that can offer job, culture and training opportunities for everyone;
- PARTICIPATE: able to listen to the needs of its inhabitants and to build answers with them;
- RESPONSIBLE: careful to preserve resources and opportunities for future generations;
- RESILIENT: ready to face the consequences of climate change.

Legambiente FVG www.legambientefvg.it/

Legambiente Friuli Venezia Giulia is based in Udine and was born in the late 80s. It is an association for social promotion (APS) which joins Legambiente Nazionale, the most widespread Italian environmental association; and it is present with 11 territorial circles covering a large part of our region. It works to foster an eco-compatible development model based on a balanced relationship between man and nature and the sustainable use of natural and human resources, promoting lifestyles and political choices based on the protection of human health, biodiversity, the territory and the landscape.

a. **Existing training materials**, in each country, on the theme of the project.

In Italy, there is a lot of information material on the project issues, while training courses devoted to the target have not been carried out by now.

By five years, all the training activities financed by the European Social Fund have been including a short module on sustainability, between 4 and 8 hours of classroom.

Sustainability, together with Equal opportunities, is assessed within the funded projects, in compliance with the so-called Horizontal Principles.

ARPA

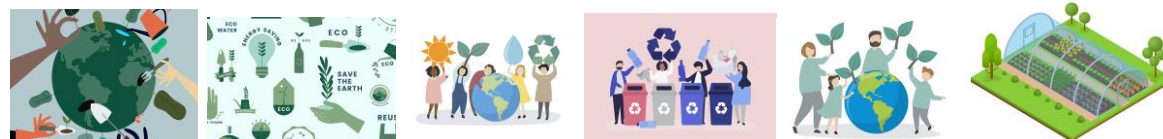
Arpa FVG school for the environment annually organizes 12 courses on the environmental issues of greatest interest. The School's proposals are devoted to public administration staff, professional and professional associations and anyone interested in deepening and improving their knowledge of environmental issues and sustainability processes.

CeVI

For years, CeVI has periodically offered refresher courses for teachers and educators created in presence in Udine and online, which are recognized by the Training System for Training and Teacher Updating Initiatives - SOFIA. The methodology used is mainly based on learning by doing (for example group work, experimentation, participatory learning) where teachers are accompanied to co-design learning paths for their students. Besides, an educational kit is developed and shared to guide and facilitate the work that teachers and educators can carry out independently in the classes involved in the project. The main topics: migration, climate change and sustainable development specifically how to decrease the environmental impact through the sustainable use of natural resources while at the same time connecting the educational processes of the school with global aspects and local institutional initiatives.

EnAIP FVG

EnAIP FVG has produced over 40 webinars on the topic, within the InreteFVG project (<http://www.inretefvg.it/>), which are now also accessible from the platform of the training Agency (enaipschool.com). Among the titles: "The circular bio-economy"; "Quality and sustainability of agri-food products"; "Sustainable food styles: vegetarianism, veganism and fruitarianism"; "Greenhouse bioproduction in Europe: intensive or agri-ecological approach?"; "Innovation and organic production: crop diversification in organic horticulture"; "The efficient use of water resources in construction"; "Less waste with Green Packaging: ideas, innovative technologies and cases of excellence"; "Sustainable tourism: cycling tourism"; "Economic and environmental advantages in choosing wood as a construction material".



LaREA

The laboratory for environmental education and sustainable development in Friuli Venezia Giulia (LaREA) annually offers educational workshops for primary school children and secondary schools. The 60 workshops planned for the year 2019/20 had it for the theme "Circular nature: mimesis and resource regeneration".

Rural Development Plan Project (PSR) – CeFAP

A temporary association, led by CEFAP, the centre for lifelong learning in agriculture and ENAIP, among the main partners, has organized a "Training catalogue of rural development" to promote the transfer of knowledge and innovation in the agricultural and forestry sector

and rural areas. The aim is to encourage the acquisition of technical, managerial, environmental knowledge and the introduction of innovative and sustainable processes, with particular concern to the agricultural, agri-food and forestry operators, as well as young people settling for the first time in an agricultural enterprise. The training catalogue is based on 45 courses belonging to 8 thematic areas. The courses are held in the regional territory, in the period December 2017 - December 2020.

UNIUD- University of Udine

The University of Udine, through some researchers, joins the RUS (Network of Universities for Sustainable Development), promoted by CRUI (Conference of Rectors of Italian Universities) in 2015, a network of universities that seek to spread culture and actions of sustainability inside and outside of the same, promoting and contributing to the achievement of the objectives of Sustainable Development.

Among the actions, the annual organization of the Festival of Sustainable Development, promoted by ASviS, the Italian Alliance for Sustainable Development, which has the task of realizing the awareness of the importance of the 2030 Agenda and the 17 objectives of sustainable development. The 2020 edition, due to the Coronavirus emergency, was held in virtual mode, on the Webex platform made available by CISCO. The CSR and social innovation exhibition continues to promote moments of comparison and sharing on issues and good practices of sustainable development. The meetings and the story of sustainability from the different territories of the country, the CSR and social innovation show, were recorded in live streaming and are available.

b. **Names of local actors, stakeholders and local group** helping to collect information

The Focus group was held in Pasian di Prato (Udine), within a meeting of the partners of the Rural Development Plan Project (PSR), an initiative led by the centre for lifelong learning in agriculture and ENAIP among the main partners. The initiative is a sort of a supply chain project "to cultivate a sustainable future". The training activities included in the catalogue were described in the previous section.

The participants were 10, mainly trainers and experts on environmental sustainability, belonging to the 9 partner organizations of the project.

They consisted of 6 women and 4 men, with over ten years of experience in the sector, mainly engaged in continuous and permanent training, but in some cases also in the initial training of young people.

Further details have been developed through telephone communications or by e-mail with some members of the technical-scientific committee of the project: University of Udine, Coldiretti, Italian Farmers Confederation, Aiab - Aprobio FVG, FVG Breeders Association, FVG Agro-food Cluster.

c. **Summary of feedback** from local groups.

The participants showed interest in the Social and Nature project and in the intention to develop educational products dedicated to the most fragile subjects.

Crucial at this moment is the choice of the theme and the desire to include it in the training agenda of each individual, while mobilizing the support network and local policy to make the product that will be made sustainable and concretely usable.

The target selection is innovative: to date, in Friuli Venezia Giulia there are no information and training materials dedicated to the most disadvantaged subjects and the mediators of their learning (for example social workers, public service operators etc.).

Everyone expressed their curiosity to test materials to integrate them, tomorrow, in their training offer. The topic of greatest interest is that of the rational use of water, a common and precious good for the so-called social natural ecosystem.

As trainers, the focus was mainly on three aspects, which also constitute recommendations for the development of teaching materials:

1. The language to be used for information and training of the target
2. The teaching medium or tool
3. The method of conducting the classroom to achieve meaningful learning.

In the following section, the highlighted elements will be analyzed in more depth.

III. Recommendations & guidelines to go further (areas or actions not yet explored) for IO.2 to IO.5.

The recommendations focus on three aspects:

1. The language to be used. The materials must be available in Italian. The concepts to be conveyed are important but complex. E-modules written with simplicity will have to be built for non-professionals. Short sentences, with texts accompanied by many images and practical-operational indications and examples taken from the daily life of the potential recipients, should be privileged. Many of the most vulnerable subjects have low schooling, some are not Italian native speakers. An understandable and possibly pleasant and enjoyable product should be studied (This facilitates learning).

2. The medium to be used. The online resources are precious but should be integrated with activities to be developed in the presence and with interactive materials, which allow the participants to become "protagonists" and take personal action in solving the problems and facing the situations presented. Workshop and practical activities are suggested, managed directly by the recipients, with the help of a learning mediator.

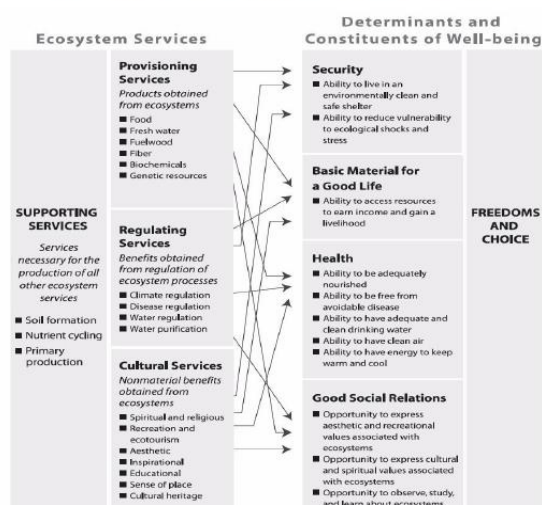
3. Study groups and individual use, remotely, should be supported by online tutors, available to clarify the steps and stimulate participation. It would be advisable to create practical exercises, accompanied by information and advice for a responsible use of resources and concrete actions for the mitigation of environmental risks (correcting wrong behaviours and bad habits). Finally, the materials should also be usable in the presence: not everyone has a computer and an internet connection available. Besides, many favour a more "friendly" and relational way, in which to have a face-to-face confrontation, sharing ideas and difficulties and defining action strategies all together.

IV. Conclusion on national context and report

The impacts of climate change are affecting Italy and the Friuli Venezia Giulia region in an evident way and with considerable damage on the environment, the economy, the well-

being and safety of people. The following diagram summarizes the relationship between ecosystem services and the main effects on human well-being.

Figura 1: Relazione tra Servizi Ecosistemici e principali effetti sul benessere umano



In the box “Good Social Relations” is underlined the importance to have the **opportunity to observe, study and learn about ecosystems** as a constituent of Well Being.

The “Social&Nature” training program is going to offer vulnerable groups and social workers (the ones most affected by climate changes consequences) some valuable information and education tools to know better and face the impacts and mitigate the risks. It is a new approach that can deliver added value to the whole community, provided that the information and training materials are simple, accompanied by examples and practical

proposals, to immediately translate into action the lesson learned.

V. Bibliography

ARPA FVG/OSMER, Il clima del Friuli Venezia Giulia

<http://cmsarpa.regione.fvg.it/cms/tema/osmer/approfondimenti/cambiamenti-climatici.html>

https://www.meteo.fvg.it/clima/clima_fvg/03_cambiamenti_climatici/01_REPORT_cambiamenti_climatici_e_impatti_per_il_FVG/impattiCCinFVG_marzo2018.pdf

IPCC, Sixth Assessment Report, <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

ISPRA, 2015, Il clima futuro in Italia: analisi delle proiezioni di modelli regionali. Stato dell'Ambiente 58/2015, Roma

ISPRA, 2017, Gli indicatori del clima in Italia nel 2016. Rapporto ISPRA Stato dell'ambiente 72/2017, Roma

Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2015, Strategia Nazionale di Adattamento ai Cambiamenti Climatici, Roma

Ministero dell'Ambiente e della Tutela del Territorio e del Mare, 2017, Strategia Nazionale per lo Sviluppo Sostenibile 2017-2030, Roma

SNPA, 2017, Introduzione agli indicatori di impatto dei cambiamenti climatici: concetti chiave e indicatori “candidati”, Prodotto del GdL 7.45 Impatti, vulnerabilità e adattamento ai cambiamenti climatici del Sistema Nazionale per la Protezione dell'Ambiente, Roma

Piano Energetico Regionale (PER) <http://www.regione.fvg.it/rafvfg/cms/RAFVG/ambiente-territorio/energia/FOGLIA111>

<https://unric.org/it/agenda-2030/>

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