SOUTH EAST EUROPE
Transnational Cooperation Programme

Programme co-funded by the EUROPEAN UNION

TERRE

TERitory, eneRgy & Employment

"For a greener future of rural area"

TERRE **Territory, Energy & Employment is project co-funded from South East Europe Transnational Cooperation Programme.**

Project code:
SEE/D/0276/4.2/X

Project website:
www.***terre***-project.eu

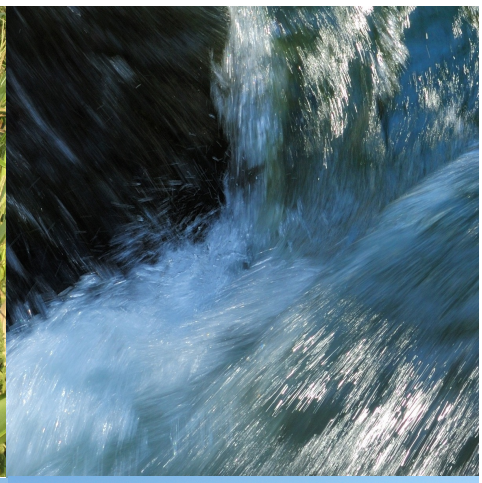
Project budget:
2.185.630,00 €

Project start date / end date:
2012-12 / 2014-12

Partners:

- **LEAD PARTNER / Province RI - Province of Rimini,** Rimini, Italy
- **Province RO - Province of Rovigo,** Rovigo , Italy
- **IUAV - University Iuav of Venice,** Venice, Italy,
- **LG Ujszilvas - Local Government of Ujszilvas,** Ujszilvas, Hungary
- **SZMJVO - The Municipal Gouvernment of the Town of Szolnok of County Ranking,** Szolnok, Hungary
- **TOB - Technology Promotion Burgenland Ltd.,** Eisenstadt, Austria
- **EEE - European Centre for Renewable Energy Ltd.**, Gussing, Austria
- **ODSEC - Municipality of Odorheiu Secuiesc**, Odorheiu Secuiesc, Romania
- **CTRP Kranj - Centre for Sustainable Rural Development Kranj**, Naklo, Slovenia
- **Dimitrovgrad - Municipality of Dimitrovgrad,** Dimitrovgrad, Bulgaria
- **IRENA - Istrian Regional Energy Agency Ltd.,** Labin, Croa ia
- **LIR Evolution,** Banja Luka, Bosnia and Herzegovina
- **CCIT - Chamber of Commerce and Industry of Tirana,** Tirana, Albania

About project TERRE

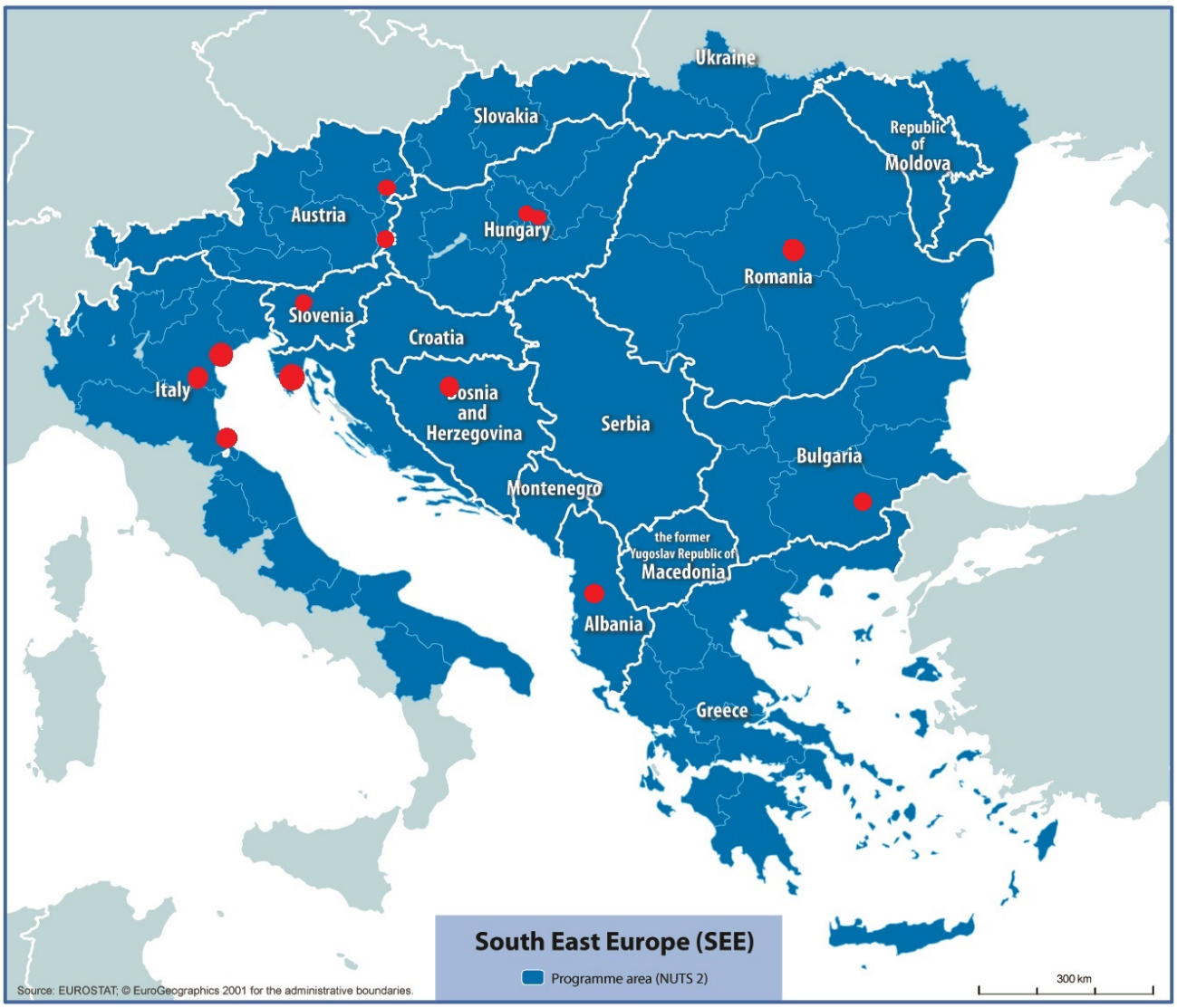


TERRE intends to experiment and demonstrate that a wise & integrated exploitation of endogenous resources to produce renewable energy is an effective engine for a self-generated and sustainable local development in the areas, based on PPP between public institutions, private operators, and local communities, to get revenues and employment opportunities in less developed or marginal zones, and thus to promote tailored paths of growth and development based on a proper use of local resources.

TERRE project will try to determine long lasting positive effects on the local energy policies which can overcome the ideological obstacles to energy plants investments across the civil society and can convince policy maker to invest in RES by adopting models and patters, based on a multi-sectorial approach, that puts forward the environmental and landscape protection and social inputs, such as the fair redistribution and employment, in exploiting the natural resources for energy purposes, with further positive impacts on employment in depressed, underproductive or depopulating areas.

Partnership in project ***TERRE*** involves balanced mix of local authorities, university, energy and development agencies and chamber of commerce distributed in 9 different countries: Italy, Austria, Hungary, Bulgaria, Slovenia, Romania, Croatia, Bosnia and Herzegovina and Albania.

TERRE involves 13 SEE areas having similar characteristics and hence common challenges: urban polarisation with consequent risk of depopulation of more peripheral zones (usually rural, hilly or mountainous), risk of underproductive crops and loss of territory safeguard. All these areas have high potential for a local development led by the renewable energies due to the availability of natural or derived resources, and ***TERRE*** project can facilitate the adoption of sustainable PPP models to implement RES investments by respecting the natural landscape.



Target groups & Stakeholders

Due to multilevel and cross-sector characteristic of ***TERRE*** and the fact of not being strictly an energy project, the target groups and stakeholders will belong to various activities and disciplines:

Target groups

Managers of NGOs	***Managers and staff of local development agencies and energy bodies***
Policy makers in a broader sense	***other user: women, children, teenagers, aged people, disabled, etc.***

Stakeholders

Farmers, breeders and wood companies	***Local communities as involved in local development***
Managers of renewable energies companies	***Managers of investment bodies***

Main objectives

- to analyze the peculiar characteristics of each territory (as natural and human resources, as well as landscape, cultural and economic characters), its potential for biomasses production from woods, agricultural and breeding activities, sun irradiation and availability of surfaces where to locate photovoltaic plants, wind and water capacity as well as the local energy demand (including heating)
- to elaborate, on the basis of the estimated potential for producing renewable energies, through the implementation of a transnational decision support system, technical economic-financial plans in each area, in order to promote economically, socially and environmentally sustainable local development.
- to strengthen the durability and sustainability of local development according to structured processes of capacity building and participation of local actors. The aim is to elaborate and share with public institutions, stakeholders (overall local private operators and investors in renewable energies) as well as with local communities, the above mentioned catalogue of investment opportunities.
- to promote a well-targeted capacity building, considering knowledge & human resources as the strongest and durable "renewable energy", addressed to groups of politicians and officials who should become more experienced in the integrated planning and governance of areas development, based overall on Public Private Partnership (PPP) & networking between different institutional level (regions, provinces, municipalities) and different growth areas at regional, national and transnational scale.

TERRE will analyse RES potentials of each territory involved in project by seven different sectors:

Wind energy

Forestry sector

Solar energy

Hidro power

Geothermal energy

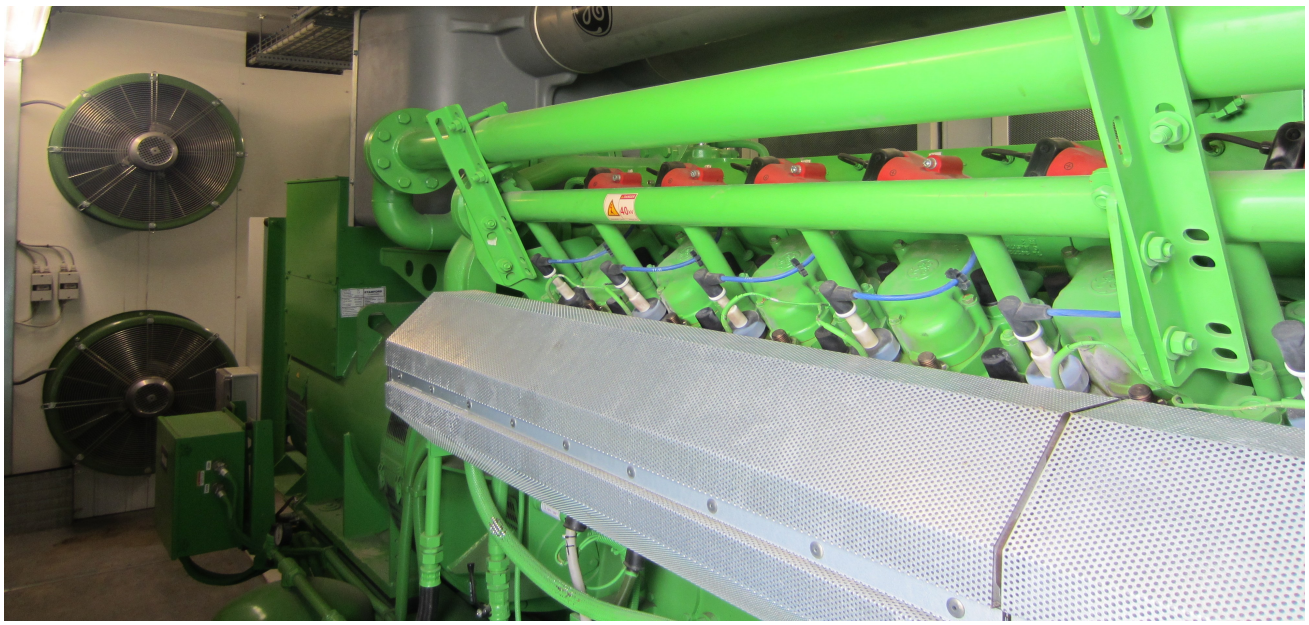
Residues

Agricultural sector

TERRE wants to stimulate a self-generated local development based on production of renewable energy from **bio-mass**, **sun**, **water and wind**.

Biomass

The agricultural sector has a key role in the progress of global renewable energy sector. The sector provides large areas where renewable energy projects can be built and is also the predominant feedstock source for biomass energy projects. Biomass feedstock in rural area includes: agricultural crops and animal waste; forestry residues; biomass processing residues and municipal waste.



A variety of fuels can be produced from agricultural biomass resources including liquid fuels, such as ethanol, methanol, biodiesel, Fischer-Tropsch diesel, and gaseous fuels, such as hydrogen and methane. The agricultural resources include animal manure and crop residues derived primarily from maize, corn and small grains. A variety of regionally significant crops, such as cotton, sugarcane, rice, and fruit can also be a source of crop residues.

The potential biomass from animal waste includes primarily waste from intensive livestock operations, from poultry farms, pig farms, cattle farms and slaughterhouses.

Globally, biofuels are most commonly used to power vehicles, heat homes, and for cooking. Biofuels are generally considered as offering many priorities, including sustainability, reduction of greenhouse gas emissions, regional development, social structure and agriculture, and security of supply.

Forestry biomass can be used to generate several forms of energy, including electricity, thermal energy, combined heat and power, or liquid bio-fuels. Electricity can be produced by burning forestry biomass to heat water and create steam. The steam then drives a turbine to produce electricity. Thermal energy, or heat, can also be produced from woody biomass. Burning hog fuel, forest slash, or wood chips in a wood-fired boiler for use in either space heat (the use of thermal energy to heat an enclosed space or building) or process heat (the use of thermal energy to provide heat for a step in an industrial process, such as drying lumber). Forestry biomass can also be manufactured into wood products like wood pellets, bricks and logs, that are then burned in industrial boilers or specifically-designed residential stoves. Liquid bio-fuels including cellulosic ethanol, bio-oil, or biodiesel can be produced from forestry biomass. Emergingwood-to-ethanol technology converts woody biomass through a biochemical or thermochemical process into sugars, which are then fermented to produce ethanol. Cellulosic ethanol can be used as a replacement of or in combination with, traditional gasoline. The current energy markets for electricity and the lack of technology that currently exists for creating liquid bio-fuels from wood make the generation of thermal energy the most economically and energy efficient

conversion of forestry biomass. From a carbon perspective, wood fuel can be used to displace the use of heating oil, natural gas, or propane in heating public facilities in rural communities.

Residential, commercial, and institutional post-consumer waste contains a significant proportion of organic material that constitutes a renewable energy resource. Organic waste, used cooking oil, animal fat, waste from starch production, waste wood from wood processing industry wood are all examples of residues that can be found in rural area and be used as renewable energy resources.

Sun

Solar energy, radiant light and heat from the Sun, is harnessed using a range of ever-evolving technologies such as solar heating, solar photovoltaic, solar thermal electricity, solar architecture and artificial photosynthesis.

Solar technologies are broadly characterized as either passive solar or active solar depending on the way they capture, convert and distribute solar energy. Active solar techniques include the use of photovoltaic panels and solar thermal collectors to harness the energy. Passive solar techniques include orienting a building to the Sun, selecting materials with favourable thermal mass or light dispersing properties, and designing spaces that naturally circulate air.

Large availability of unexploited lands in rural region, makes solar energy systems, especially photovoltaic an attractive proposition for population of rural territories. PV systems can be used for domestic as well as commercial power generation. In addition, there are a handful of applications in agricultural sector such as water pumping and irrigation. Off-grid photovoltaic systems ensure a reliable and completely autonomous water supply at low cost – without fuel-powered generators, battery systems or long power lines. Solar energy can make irrigation independent of grid power. Low-pressure drip irrigation systems can be operated with any photovoltaic-powered pump, making them ideal for areas not connected to the grid. Photovoltaic projects require low capital investment and can be developed at small-to-medium scales.

Water

Hydro energy is energy that is taken from water and converted to electricity. Hydro energy can be obtained by using many methods of capture. The most common method of using energy from water is a hydroelectric dam, where water coming down through an area causes turbines to rotate and the energy is captured to run a generator. Power can also be generated from the energy of tidal forces or wave power, which uses the energy created by waves. One downside to using hydro energy is that it can sometimes change the natural flow of the water which can make it possible to harm plants and animals in the water. It can also damage areas and wildlife, as when creating a hydroelectric dam, areas must be flooded.

Other reasons that many want to use hydro energy is that it is cheaper than using other methods to convert energy to electricity. It is also reliable and can be used almost immediately when turned on to meet the demand for electricity. Therefore, one must weigh the pros and cons before deciding to use hydro energy to supply their demand for electricity.

Wind

Wind power is an alternative way of providing electricity, although the cost is higher than paying for a traditional electric provider. Wind power has been used for generations in remote areas and when driving through the country you may see a large wind turbine sitting in empty fields or even nearer to an old farmhouse. A wind turbine may use a type of grid energy storage system the will store the energy to be used at a later time. The wind turbines themselves can range from a 400 watt generator to be used for residential purposes to enough to be used for wind farms. The small turbines will have direct drive generators, direct current output, and are usually used on farms and smaller residences. One of the main arguments for using wind power is that it is a renewable resource, meaning it cannot be depleted like other fuels, such as coal. Wind power does not produce any toxic substances such as carbon dioxide or any type of air pollution so it is considered to be a clean energy source. The fact is that, while wind power may not save a ton of money quickly, it can certainly help to save it in the long run by saving earth's other resources that may be depleted in the future.

Expected results

- the development of 12 set of scenarios on renewable energies potential and socio-economic and environmental impacts on territories based on the application of a common Decision Support system (DSS)
- the definition of one ***TERRE***'s Transnational model related to the sustainable and balance exploitation of RES as engine for the local development to be used as driver for the preparation of the technical & financial local plans capable to bring investments
- the design of 12 local technical-economic-financial plans addressing strategies and actions for local development based on RES
- the issue of one Transnational Catalogue of Investment Opportunities on Renewable Energies for Local Development
- the realization of three pilot investments and the range of actions activated to catalyse investments and funds based on the ***TERRE***'s patter and own local plans, concretely testing the feasibility of the approach set by the project
- the increase of knowledge of the involved administrations and their local communities through the organization of regional capacity building, as well as elaborate stakeholders preferences, aspirations and visions and the elaboration of a crossing transparent vision and emerging conflicts due to the exploitation of the RES in the concerned project areas
- the involvement, thanks to the appropriate usage of the several communication channels, of 260.000 people, out of which 15.000 directly affected by the message

Contact
www.terre-project.eu

LEAD PARTNER

Province of Rimini
C.so D'Augusto 231 Rimini, Italy
Type of institution : Local Authority
Legal representative : Mr. Stefano Vitali
Phone: +39 0541 716224 / **Fax:** +39 0541 716273
Website: www.provincia.rimini.it

Province of Rovigo
Via Celio 10, 45100 Rovigo, Italy
Phone: +39 425 386171 / **Fax**: +39 425 386170
Website: www.provincia.rovigo.it

Local Government of Ujszilvas
Szent Istvan utca 6, Ujszilvas, 2768, Hungary
Phone: +36 53 387 001 / **Fax:** +36 53 587 519
Website: www.ujszilvas.hu

Technology Promotion Burgenland Ltd.
Marktstraße 3,7000 Eisenstadt, Austria
Phone: +43(0)5 9010-2220 / **Fax**: +43(0)5 9010-2210
Website: www.tobgld.at

Municipality of Odorheiu Secuiesc
Piaţa Városháza, no. 5, Odorheiu Secuiesc, 535600 Romania
Phone: +40 266 218145 / **Fax**: +40 266 218032
Website: www.varoshaza.ro

Municipality of Dimitrovgrad
15 "G. S. Rakovski" Blvd, Dimitrovgrad 6400, Bulgaria
Phone: +359 391 68228 / **Fax**: +359 391 66996
Website: www.dimitrovgrad.bg

LIR Evolution
Petra Kočića 1c, 78000 Banja Luka
Bosnia and Herzegovina
Phone: +387 51 329 750 / **Fax**: +387 51 329 751
Website: www.lir.ba

University Iuav of Venice
Ca'Tron, S.Croce 1957 Venezia, 30135 Italy
Phone: +39 041 2571726 / **Fax:** +76 041 2572424
Website: www.iuav.it/climatechange

Municipality of Szolnok Town of County Rank
H-5000 Szolnok Kossuth tér 9.,Hungary
Phone: +36 56 503 821 / **Fax:** +36 56 503 424
Website: www.szolnok.hu

European Centre for Renewable Energy Ltd.
A-7540 Güssing, Europastraße 1, Austria
Phone: 00433322 9010 85020 / **Fax:** 0043 3322 9010 85012
Website: www.eee-info.net

Centre for Sustainable Rural Development Kranj
Strahinj 99A, 4202 Naklo, Slovenia
Phone: + 386 4 257 88 26 / **Fax**: + 386 4 257 88 29
Website: www.ctrp-kranj.si

Istrian Regional Energy Agency Ltd.
Rudarska 1, 52220 Labin, Croatia
Phone: +385 52 351 550 / **Fax**: +385 52 351 555
Website: www.irena-istra.hr

Chamber of Commerce and Industry of Tirana
Rruga "Ludovik Shllaku", Pallati Kultures, Kati II, Tirane 1001, Albania
Phone: +355 4 5800932 / **Fax**: +355 4 2227997
Website: www.cci.al