

Effects of European Transnational Cooperation on the Promotion of Renewable Energy and Energy Efficiency in IPA countries: The Experience of the MED Programme

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This paper addresses territorial development through cooperation practices between European Union Member States and candidate countries. The European Territorial Cooperation (ETC) is an objective of the European Union (EU) Cohesion Policy and constitutes a key driver to reducing disparities in the Union's territory. ETC instrument integrates the participation of third countries, namely those included in the categories: Instrument for Pre-Accession (IPA) and European Neighbourhood Policy Instrument (ENPI). The ETC transnational programme for the Mediterranean area (MED Programme) covers ten member states of the European Union and three countries belonging to the IPA instrument: Bosnia and Herzegovina, Albania, and Montenegro. In 2013, the MED programme approved eight transnational projects integrating IPA partners and addressing the use and promotion of renewable energy sources (RES) and energy efficiency (EE). According to the current transitional period that entails a concluding cycle 2007–2013 and opening 2014–2020, ETC evaluation aspects, applied to specific thematic areas, are essential for better implementation of future strategies and learning from previous lessons. In this context, the purpose of this paper is to analyse the effects of ETC on the promotion of RES and EE in IPA countries by considering the experience of the MED programme. The methodological approach includes: (1) data gathering process (2) desk research and analysis of results and (3) validation of obtained results. The added value of this research represents supplementary evaluation

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input related to the ETC intervention in non-EU member states within the specific contexts of RES and EE.

Key Words: EU cohesion policy, European territorial cooperation, IPA countries, Mediterranean, renewable energy and energy efficiency

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INTRODUCTION

The European Territorial Cooperation (ETC), also known as INTERREG, is one of the two objectives of the EU Regional and Urban Policy and constitutes a key element of reducing economic and social disparities between regions and cities. The INTERREG MED Programme is part of the ETC objective and is co-financed by the European Regional Development Fund (ERDF) and by the Instrument for Pre-Accession assistance (IPA) funds. The Programme's main purpose is to contribute to the long term development of the Mediterranean area and to strengthen transnational cooperation among peoples of 57 regions in 10 different EU member states and three candidate countries: Albania, Bosnia and Herzegovina and Montenegro (MED Programme 2011).

Article 86(4) of IPA Implementing Rules (European Commission 2007) provides the possibility for candidate countries to participate in the initiatives of transnational scale through the cross-border cooperation component.¹ In the MED Programme this cooperation has been possible through priority axes related to (1) innovation capacities, (2) protection of the environment and sustainable territories, (3) improvement of maritime accessibility, and (4) promotion of a polycentric MED development space.

In February of 2012, within the framework of priority axes (1) and (2), the Programme launched its fifth call for project proposals focused on innovative technologies, know-how, promotion of RES, and improvement of EE. Nineteen transnational projects were approved, of which 16 included partners of IPA countries. In total, 25 partners benefited from IPA funding (including Croatia) representing local and regional public authorities (PAs), energy agencies, economic development agencies, universities and port authorities. Related projects were carried out in about 2.5 years within



TABLE 1 Renewable Energy Objectives (Framework of Energy Community Treaty)

Contracting party	Share of RES 2009	Target RES in 2020
Albania	31.2%	38.0%
Bosnia and Herzegovina	34.0%	40.0%
Montenegro	26.3%	33.0%

[7]

the period 2013–2015 and addressed several challenges, such as energy management; energy planning, implementation and monitoring; funding; public procurement; and private-public-partnerships (MED Programme 2013).

With these cooperation projects, IPA partners received financial stimulus to boost action towards the accomplishment of RES objectives defined by national and macro-regional (Balkans) energy strategies. At the national level, the strategy documents are the National Renewable Energy Action Plans (NREAPs) which define the priorities and types of action on sustainable energy for the next years. At transnational scale, all members of western Balkan region have subscribed to the energy community treaty (Energy Community 2006) which establishes binding renewable energy objectives for 2020. For IPA members of the MED Programme, these objectives are summarised in table 1. As for energy efficiency, achieved levels are still low. Countries such as Bosnia lack national regulation on energy efficiency; while Albania and Montenegro have recently integrated EE measures in their national policies (Better Project 2013).

According to Article 22 of the Council Regulation (EC) No 1085/2006 (Council of the European Union 2006) on the establishment of an instrument for pre-accession assistance (IPA), the Commission shall regularly evaluate the results and efficiency of policies and programmes with a view to improving future operations at policy level (ex-post evaluation). In addition, the MED Programme is expected to continuously improve its operation with lessons learnt from previous experiences. An evaluation plan for the period 2014–2020 should be submitted to the Commission prior to June 2016.

Hence, the purpose of this paper is to analyse the effects of ETC in the promotion of RES and EE in IPA countries by considering

[8] the experience of the MED Programme. The added value of this research represents supplementary assessment input to the ETC intervention in non-EU member states within the specific contexts of RES and EE. Obtained results are expected to contribute to evaluation process to be carried out by the Commission (ex-post) as well as to input motivating improvements at both programme and project levels in future EU operations.

METHODOLOGICAL FRAMEWORK AND DATA

The methodological approach of this work integrates three principal steps: (1) data gathering process, (2) desk research and analysis of results and (3) validation of obtained results. The assessment approach refers to the guide Evalsed (European Commission 2013) by addressing thematic evaluation applied to RES and EE as well as generating additional data (e.g. survey analysis).

Data Gathering Process

Information of reference was obtained through programme guidance documents (e. g. Call for projects and terms of reference), websites of targeted projects, internal reporting documents used within monitoring process (e. g. activities reports, minutes) and deliverables (e. g. plans, studies, tools, publications). In some cases, the analysis considered draft versions of targeted documents as final versions were still in progress. Key bibliography as EU regulation, related initiatives, policy and scientific papers were also taken into account.

Desk Research and Analysis of Results

This part focused on screening the results delivered by IPA partners of Albania, B & H and Montenegro in the framework of the MED programme projects addressing totally or partially renewable energy and/or energy efficiency. Particular attention was paid to qualitative aspects linked to the typology of activities and results as well as to the ways in which IPA partners implemented activities oriented to increasing or stimulating the contributions from RES and EE in their territories.



Validation of Obtained Results

In order to validate the observations made at the previous step, a sample of IPA partners' representatives was designed. The sample was constituted by 7 IPA beneficiaries who participated in 6 different MED projects. Taking as reference all projects belonging to the fifth call of the MED Programme, which integrated IPA partners (Albania, Bosnia-Herzegovina and Montenegro), the sample constitutes a representativeness quote of 77% of partners and 90% of projects. Several exchanges with stakeholders and one survey of reference integrating 12 questions were the central elements of this step.

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The survey focused on 9 fields of analysis such as experience with IPA funding, continuation of activities after IPA grants, and synergies with transnational, national and subnational initiatives of reference. The survey also integrated quantitative aspects linked to the effect of IPA partners' contributions throughout four variables of reference: (1) Number of reduced emissions of CO₂ (Ton equiv); (2) Installed power with renewable energy (MW); (3) Energy efficiency achieved (%); and (4) Investments triggered (€).

ANALYSIS OF RESULTS

The results of the analysis indicate that the European Territorial Cooperation promoted by MED Programme has contributed positively to the stimulated increase of actions in RES and EE in IPA countries. Table 2 summarises the main output at desk research step by identifying (a) general contributions obtained within the cooperation dynamics established amongst partners (projects level) and (b) specific output facilitated by beneficiaries exclusively in their territories (IPA Partners).

Accordingly, IPA partners benefited in a twofold way: on one hand, the project implementation itself contributed to increasing capacity building of beneficiaries in issues related to EU funding management, understanding and practicing territorial cooperation, exchanging knowledge and experiences with other partners and stakeholders, identifying and implementing good practices, developing joint approaches and methodologies, among others (Koeth

[10] 2014). On the other hand, activities developed by IPA partners led to the achievement of key results in their specific territories oriented to the fulfilment of the objectives established by the MED Programme (Terms of Reference) and by the specific projects of reference (as described in each project application form). As these objectives are based on innovation measures applied to renewable energy and energy sector; IPA partners delivered, inter alia, local RES and EE roadmaps, guidance materials for energy management, energy audits, establishment of local working groups, provision of evidence for improving local, regional and national policies, sustainable energy action plans (SEAPS), state of the art and feasibility studies in related sectors, awareness raising campaign, training sessions and pilot activities (Wider Project 2015).

Projects co-financed by MED Programme normally follow a three-phase approach consisting of (1) diagnosis and strategies, (2) testing and demonstrative actions (3) transferability and capitalization (MED Programme 2015). Accordingly, the analysed output of IPA partners is situated mostly in phases 1 and 2. In the first phase, IPA partners carried out activities and delivered output normally related to identifying initial parameters and/or benchmarks of the sector of reference (e.g. state of the art of renewable energy; criteria for green procurement). In the second phase, test activities and pilot actions were the most typical products.

However, pilot approaches remain in many cases incomplete as monitoring elements and evaluation process were absent or not integrated. As for the third phase, little evidence of capitalisation strategies in IPA partners were found, and synergies with initiatives of reference were scarce.

A positive aspect observed in activities developed by IPA partners was the engagement of civil society through the 'establishment of local groups.' These nominated stakeholders' groups, integrating several perspectives of civil society, not only contributed to better address local strategies and enriched the quality of the results but also meant additional support to awareness-raising considering the benefits of renewable energy and energy efficiency in terms of environmental quality and economic growth.



TABLE 2 Summary of Output Delivered by MED Programme Projects Integrating IPA Partners and Addressing RES and EE in the Period 2007–2013

Projects/main outputs from contributions at project and partner level
<p>GRASP (www.grasp-med.eu)</p> <p><i>Joint contributions by projects' partners (including IPA)</i> Procurement System Analysis: Transnational Mapping and design of Common Operating Model; Knowledge database on e-procurement and solutions implemented by public operators in the fields of renewable energy and energy efficiency; Transnational networks; E-green procurement toolkit for supporting energy-efficient and renewable-based products and services; Pilot actions (common methodology, implementation and assessment).</p> <p><i>Specific IPA partners' contributions</i> <i>City Development Agency East Sarajevo-RAIS, Bosnia-Herzegovina:</i> Establishment of Advisory Board and Evaluation Board; Benefited 16 SMEs directly; Regional and Comparative analysis; Registration of 10 products into the database using GRASP-DBA tool; GRASP seminar: Green procurement and energy efficiency technologies; Promotional audiovisual material. <i>University of Vlora, Albania:</i> Regional analysis and comparison report related to e-procurement in Albania; Education materials and organization of theoretical training seminar in Tirana, Albania; Creation of the database for SMEs; Development of modules of the GRASP application, DB platform (module login, sign up, password reset, PA profile and SME profile template); Preparation of the specifications for the appropriate server configuration (toolkit).</p>
<p>ENERGEIA (www.energeia-med.eu)</p> <p><i>Joint contributions by projects' partners (including IPA)</i> Joint methodology for renewable energy sector mapping; Good practices in supporting entrepreneurs in the renewable energy sector; Regional collaborative plans; Report on business support paths; Guide for pilot action implementations.</p> <p><i>Specific IPA partners' contributions</i> <i>SERDA Sarajevo Economic Region Development Agency, Bosnia-Herzegovina:</i> Regional Survey on the renewable sources in B&H, including a SWOT and a CAME analysis of sector; establishment of working local involving policy makers at the Federal ministry of industry, energy and mining; Good practice selection indicating the first private company in B&H which is producing electricity from renewable energy sources 'Intrade-energija'; Pilot Actions focused on education of business support actors and business ideas or start-ups through workshops on topics as finance; Actions to raise the awareness in the field of renewable energy, as well as on innovation, research and development, technology transfer strategies and business models.</p>

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Projects/main outputs from contributions at project and partner level

REMIDA

Joint contributions by projects' partners (including IPA)

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Local EE and RES roadmap; Adhesion Support to the covenant of mayors in 9 municipalities; Sustainable energy action plans; Schemes of Private Public People Partnerships; Operational/investment assessment analysis; Investment plan; Handbook on case studies; Pilot actions.

Specific IPA partners' contributions

Capital City Podgorica, Montenegro: Constitution of local working group; Inputs for the definition of sustainable energy action plan Municipality Gračanica (including baseline emissions definition and calendar of activities); Identification of best practice on energy efficiency and public-private-partnership in B&H; Awareness raising activities, e.g. Organization of the Open Day.

WIDER (www.wider-project.eu)

Joint contributions by projects' partners (including IPA)

Joint measures to favour innovation for eco-smart housing for elderly; Pilot activities management and implementation (eco-innovation vouchers to SMEs); User feedback Report; Networking strategy/plan.

Specific IPA partners' contributions

SERDA Sarajevo Economic Region Development Agency, Bosnia-Herzegovina: Organization of 5 scenario local workshops; Innovation vouchers to 7 Bosnian small and medium enterprises working on energy efficiency and a sustainable and holistic approach towards Silver economy, eco smart housing and active ageing of the elderly: (1) Bright home my home, (2) Senior Tourism (3) urban roof garden (4) Sustainable and independent (5) Termoprost (6) Homes certification (7) Epsimax; Co-organization of Transnational Capitalisation Event on 'Eco-Smart Housing for Elderly (hosted by Central Europe Initiative, Trieste).

E2STORMED (www.e2stormed.eu)

Joint contributions by projects' partners (including IPA)

Regional Working Groups on Energy Efficiency; Storm water management system; Decision Support Tool on scenarios related to water storm management in terms of costs, benefits and CO₂ emissions reductions; Common approach for pilot activities on Greenroofs.

Specific IPA partners' contributions

Old Royal Capital Cetinje, Montenegro: Pilots on conventional drainage in historic centre and new development area (Gruda Donje polje); Water reuse benefits, runoff transport, flood protection, building insulation; Inputs to urban planning process of Old Royal Capital Cetinje; Strategic action plan; Constitution of local Working Groups on Energy Efficiency.

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TABLE 2 *Continued from the previous page*

Projects/main outputs from contributions at project and partner level

GREENPARTNERSHIPS (www.greenpartnerships.eu)

Joint contributions by projects' partners (including IPA)

Approaches definition for implementation of energy strategies; Common model for comparison of existing implementation approaches; Common list of obstacles in implementation of local energy strategies; Transnational Expert Working Groups; Database of existing models, best practices, methodologies and indicators on implementation of energy strategies; Guide for efficient implementation of local energy strategies by forming local partnerships.

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Specific IPA partners' contributions

Agricultural University of Tirana, Albania: Pilot activity, School of Manza municipality, Albania. Use of biomass and municipality waste to produce energy for schools and kinder gardens including awareness raising and training courses; Establishment of local action group; Awareness raising events (e.g. open days, workshops); International conference: Green Energy and Environmental Science in Albania.

Hydro Engineering Institute Sarajevo (HEIS), Bosnia-Herzegovina: Pilot activity, increasing energy efficiency in eco-schools and public administration buildings.

Elementary School Vrhbosna and Gymnasium Dobrinja in Sarajevo: Feasibility study on creation and support fund for energy efficiency housing; Energy audit; Awareness raising campaigns in schools and public buildings administrations; Establishment of local action group.

Institute for Strategic Studies and Prognoses, Montenegro: Feasibility study on installation of hydro power plants in Montenegro; Pilot activity, connection of mini-hydropower plant Jezerstica to the energy network; Sustainable energy action plan; Establishment of local action group; Awareness raising events (e.g. open days, workshops).

Survey of Stakeholders

With an aim to count on the vision of IPA beneficiaries and validate collectively the observed results, the survey was addressed to a representative sample of partners (see details in methodological chapter), contained 12 questions and focused on 9 different fields of analysis as follows:

- 1 *Experience in management of IPA funding.* About 30% of surveyed partners indicated that MED Programme and co-financed project of reference allowed them their first experience in

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IPA funding management. As for the remaining 70% of partners, IPA funding management experience oscillates between 2.5 (40%) to 6 years (30%). The main ETC programmes, where these partners have acquired related experience, were, in order of importance, South East Europe, IPA-Adriatic, Croatia-Montenegro CBC, Albania-Montenegro CBC and B&H-Serbia CBC. *Fields of intervention.* Energy efficiency and renewable energy were the main fields of intervention by IPA partners in their respective projects of reference. Seventy percent of analysed partners identified EE as their principal field of intervention in their territories (primarily 'cities'), with 'buildings' being the main target of related activities. Concerning RES, 30% of partners focused their interventions notably on solar thermic, mini-hydro power, biomass, and wind technologies.

- 2 *Typology of activities.* IPA funding granted to surveyed partners was allocated to several types of activity according to working plans and projects' specific objectives. For 42% of partners, the most important activities were those oriented at obtaining a general picture of the area of intervention (e.g. mapping, analysis and feasibility studies). For 30% of partners, pilot activities and demonstration actions were identified as the categories covering a substantial part of working plans. The remaining 30% corresponds to training, dissemination and communication activities. Capitalisation activities were scarce being noticed in 10% of the sample.
- 3 *Typology of deliverables.* Common products delivered by projects were mostly in form of reports, studies and publications. According to the obtained answers, the following deliverables were identified by IPA partners as the most important ones: Report on pilot activities (85% of partners), good practices identification and public consultation (71%), report on communication and benchmarking studies (57%), databases and reports on the state of the art (42%), tools and good practice implementation (28%). Additionally, 100% of surveyed partners indicated that these types of deliverable and associated



activities were the most appropriate for the achievement of their expected objectives.

- 4 *Project quantitative contribution.* This analysis field focused on four quantitative variables of reference: (1) Number of emissions of CO₂ (Ton equiv); (2) Installed power with renewable energy (MW); (3) Energy efficiency achieved (%) and (4) Investments triggered (€). For the first two variables, 100% of screened structures did not provide any information. As for values related to energy efficiency achieved and investments triggered, only two partners answered, indicating 30% and 2.539,55 € respectively. According to comments provided by partners, this absence of information can be a function of several reasons such as: project methodologies do not allow measurement and/or calculation; project stage is too early to allow obtaining the values; and lack of knowledge and skills to make calculations. [15]
- 5 *Perception on synergies with local, regional and national policies.* IPA partners established synergies with similar initiatives and policies, notably at the national and regional level. Seventy-one percent of the sample perceived these national and regional synergies as ‘satisfactory,’ while 14% considered that they were ‘excellent.’ With regard to local policies, established synergies were perceived as ‘satisfactory’ by 42%; ‘very good’ by another 42%, and ‘excellent’ by 16%. On the contrary, the level of synergies established with transnational initiatives (e.g. other projects, initiatives for Balkan or Mediterranean regions) was limited to 28% of partners, i.e., those who integrate Horizon 2020 and United Nations projects in their activities.
- 6 *Public targets and number.* Public targets identified by partners were in most cases Small and Medium Enterprises (90% of the sample). Other types of target corresponded to the public sector; within these, local authorities were addressed by 85% of partners, regional authorities (71%) and national authorities (42%). In addition, partners focused on other specific key targets, such as: consumers (71%), citizens (42%), students

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(42%), and technicians (42%). Concerning the number of beneficiaries achieved by IPA partners in their specific territories, 85% of the sample estimate that project activities covered between 100–1000 beneficiaries, while the remaining 15% indicate that they achieved between 10.000 and 100.000 beneficiaries.

- 7 *Continuation of activities after the end of IPA grants.* Partners' strategies allow already the identification of ways to continue activities after the end of IPA grants. In 85% of cases, screened stakeholders see IPA funding through European territorial cooperation as the clearest way to assure continuation. From a thematic point of view, the core object of new ideas is identified in wind and solar sector (renewable energy) and public buildings and eco-smart housing (energy efficiency). Most partners will work on activities related to evolution from mapping towards investors' engagement, public procurement, capacity building mostly focused on public authorities and SMES, implementation (e.g. urban plans, SEAPS and good practices), awareness raising, follow-up actions of pilot activities, as well as replicability.
- 8 *Main difficulties faced in project implementation.* Financial difficulties derived from the slow payment process and reimbursements of expenditures were identified by 42% of sample as main administrative obstacles. Payments in advance corresponding to 10% of partners' budget are perceived as insufficient. From a thematic point of view, IPA partners considered that most important difficulties lie in national regulations gaps and incompatibilities with EU regulation, acquis criteria achievement.² and lack of knowledge, experience and skills of public targets.

CASE STUDY: GRASP PROJECT AND GREEN PROCUREMENT IN IPA COUNTRIES

An example of specific contributions is given by outlining the case of two IPA partners in project GRASP (Green pRocurement and Smart city suPport in the energy sector) that developed and tested



a method for electronic Green Public Procurement (e-GPP). The two IPA partners were from Albania and B&H (GRASP 2015).

Desk Research and Analysis of Results

Analysis of research results indicated that in Albania all knew what e-GPP is and were aware of their National legislation. All PAS use the National Public Procurement System but none uses Green Procurement Policies during tendering. Even though all of the questioned SMES stated that they offered green products, most did not know the requirements of the products/services they are offering. Save time, save money, and gain flexibility are the main reasons for PAS to use e-GPP. The main barriers that they face in the use of e-GPP are a higher cost of green products/services; lack of information and useful tools; and insufficient demand for green products/services (figure 1). The main reasons for SMES not to participate in an e-GPP are the lack of information, lack of interest, and the low probability of success (figure 2).

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For SMES, the main barriers for participating in an e-GPP are the insufficient demand and high cost for green products/services. Both PAS and SMES stated that they would like to receive training on: the identification of specs for Green products/services; and Quality Management and manuals elaboration.

In B&H most questioned users (PAS and SMES) knew, or at least had an overview of what Green Public Procurement is. However, almost all were not aware of the National and Regional Regulation in GPP, and this is mostly due to lack of legislation, interest, infor-

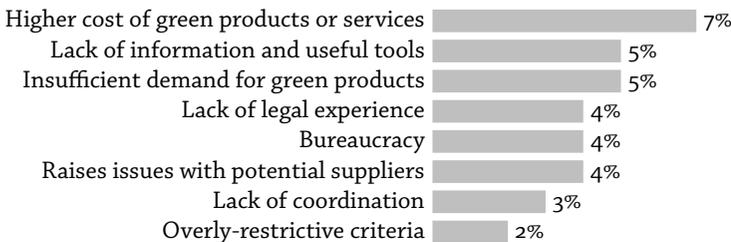


FIGURE 1 Main Barriers Faced by Public Administrations of Albania in the Use of e-GPP

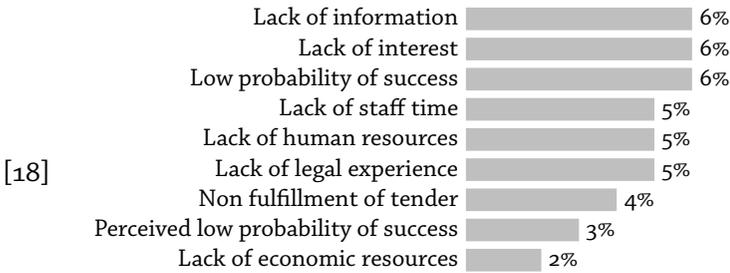


FIGURE 2 Main Barriers Faced by SMEs of Albania in the Use of e-GPP

mation and education. Both SMEs and PAS knew what e-GPP is, but they did not know if a National Regulation on electronic Public Procurement exists in Bosnia-Herzegovina; nor did they know its content. Nevertheless, the PAS seemed to have a bit more knowledge on these matters compared to the SMEs. Even though 10/16 questioned SMEs stated that they offered green products and services, only one was familiar with the requirements of the products/services he is offering, whereas the majority of the PAS (10/17) stated that they were not familiar with SMEs that offer green services/products.

The main reason why PAS are not using electronic public procurement, is a lack of technical resources. This is followed by a low perceived probability of success, and lack of interest. Lack of legal experience and lack of information are the main reasons that none of the questioned SMEs has ever participated in an electronic format e-GPP. Other important reasons are a lack of necessary skills, lack of time, and lack of human resources. For both PAS and SMEs, the main reasons for participating in an electronic GPP are saving time, saving money, and environmental commitment.

The most important barriers, identified by the SMEs in accessing GPP, are: higher cost of green products or services, lack of information and useful tools on administration, long process of bureaucracy, and lack of coordination between regional and national PAS. For the PAS the main barrier for accessing GPP is the lack of information and useful tools on the Administration side, which is followed by a lack of legal experience, and a higher cost of green products or services.



Regarding the training they would like to receive, the SMES are more interested in GPP legal framework and manuals elaboration. Both SMES and PAS would like to be trained on IT tools for Energy Efficiency. Concerning the seminars about enterprises certificates, the SMES are mainly interested in seminars about Environmental management systems, Eco design management, Eco-labeling and Energy management systems standards; whereas the PAS would like to attend seminars about Eco labeling, Environmental management systems, Eco design management, Energy management systems standards, and Carbon footprint. PAS show greater interest in receiving training compared to the SMES.

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Validation of Results

For validating research results, all GRASP partners piloted or tested the electronic Green Public Procurement tool developed by the project. Each partner selected a specific EE/RES category to test. The results were evaluated through the Life Cycle Cost (LCC) tool, developed by GRASP. This tool was mainly designed to compare two similar products, i.e. one with a lowest up-front price, and the other with a sustainable lowest price (green product). The LCC tool also provides (a) the calculation of the absolute cost of a new product by analysing its lifetime cost, and (b) the valuation of a new substitute product, which is based on examining the savings produced by this product. Having completed the evaluation, the winning product can be compared to others, in order to select the best option based on LCC. The aim of this tool is to show that the misunderstanding that green products are more expensive is often false, especially in long-term projects.

In the case of the University of Vlora (ALB), an auction tender was tested with reserved procedures and the lowest price as the award criterion. The tender was carried out with the participation of five SMES of the IT sector. Over the five-year period, the environment-friendly product failed to save more money than the up-front lowest price alternative. However, it saved 0,124 tons of CO₂ compared to that alternative.

In the case of RAIS (B&H) the test-tender was an open proce-

TABLE 3 Results of Testing Tool for Natural Gas

Category	Item	Lowest price	Highest price
Energy costs	Price of energy (€/l)	0.57	0.57
	Energy consumption (W)	26741.00	10899.00
	Lifetime energy cons. (kWh e/t)	668,534.50	272,466.00
	Total energy costs	383,070.27	156,123.02
Emissions	CO ₂ per kg (kg)	0.20	0.20
	Total CO ₂ avoided (t)	0.00	79.21
	Economic value of CO ₂ (€/t)	7.02	7.02
	Total econ. value of avoided CO ₂ (€)	0.00	556.10
Total life cycle costs		383,070.27	155,566.94

NOTES Calculations for 25 years, average usage time 1000 h/year.

cedure for the selection of facade works for the Administrative center of City of East Sarajevo, with the classical method compared to the GRASP method. The case has to do with a building retrofitting operation that uses multiple forms of energy source. Three different sources had to be taken into consideration: natural gas, fuel oil, and electricity. The overall cost is calculated as the sum of three different LCC sheets.

Table 3 describes the changes in the consumption of natural gas, electricity and fuel oil. Compared to the original building, the improved one obtains use of natural gas that is reduced by 50%. Beyond the energy saving that is due to the reduction of fuel consumption, the operation allows the reduction of CO₂ emissions. Table 4 shows the difference in electricity before and after building retrofitting. In this case the consumption of energy is higher in the improved building. Table 5 describes the use of fuel oil. Energy consumption for the improved building is zero, while prior to retrofitting the consumption was high (13764 l). The final assessment is based on the sum of the total LCC of all three different energy sources; it indicates that the environment-friendly option carries lower LCC but higher CO₂.

CONCLUSIONS

In the period 2007–2013, the MED Programme contributed to increasing capacities of IPA partners engaged in projects of the pro-



Effects of European Transnational Cooperation

TABLE 4 Results of Testing Tool for Electricity

Category	Item	Lowest price	Highest price
Energy costs	Price of energy (€/l)	0.04	0.04
	Energy consumption (W)	166,146.00	300,514.00
	Lifetime energy cons. (kWh e/t)	4,153,650.75	7,512,846.50
	Total energy costs	147,039.24	265,954.77
Emissions	CO ₂ per kg (kg)	0.39	0.39
	Total CO ₂ avoided (t)	0.00	-1296.89
	Economic value of CO ₂ (€/t)	7.02	7.02
	Total econ. value of avoided CO ₂ (€)	0.00	-9.104.20
Total life cycle costs		147,039.24	275,058.97

[21]

NOTES Calculations for 25 years, average usage time 1000 h/year.

TABLE 5 Results of Testing Tool for Fuel Oil

Category	Item	Lowest price	Highest price
Energy costs	Price of energy (€/l)	1.04	1.04
	Energy consumption (W)	13764.00	0.00
	Lifetime energy cons. (kWh e/t)	344,087.66	0.00
	Total energy costs	357,162.99	0.00
Emissions	CO ₂ per kg (kg)	0.27	0.27
	Total CO ₂ avoided (t)	0.00	94.62
	Economic value of CO ₂ (€/t)	7.02	7.02
	Total econ. value of avoided CO ₂ (€)	0.00	664.30
Total life cycle costs		357,162.99	-664.26

NOTES Calculations for 25 years, average usage time 1000 h/year.

gramme 5th call. The analysed results were achieved by exercising European Territorial Cooperation amongst Mediterranean partners with a direct effect on the stimulation of use and promotion of RES and EE in IPA territories.

Achieved results should be considered as interface of new interventions in same or similar thematic and targeted territories. Although project outputs are of varied nature they could be used individually or collectively to define starting points, references or baselines of future projects and initiatives.

The MED Programme, along with most ETC Programmes, is plac-

[22] ing high emphasis on capitalisation strategies addressed by projects and partners, which should be able to either improve what exists or create new and innovative solutions, based on acquired experiences. Accordingly, future IPA interventions should be more ambitious when addressing capitalisation in their daily activities.

At European Level, at least 12 different programmes exist which address cross-border and transnational cooperation through IPA funding. For the period 2014–2020 the instrument IPA will dedicate € 11.7 billion to support new projects. Accordingly, joint exercises at programme, project and partner level, looking for the enhancement of synergies between several initiatives (financed with both EU fund and others), would represent improvements and advancements in the efficient uptake of funding and related activities.

Measurement of projects' impact in quantitative terms provides additional and more concrete elements for assessing related activities. Renewable Energy and Energy Efficiency interventions should integrate more extensively key indicators (e.g. renewable energy triggered), not only to allow better evaluation but also to follow specific objectives established by the Energy Treaty Community and Directive 2009/28/CE.

The case study of GRASP project provided evidence on green e-procurement applied to the RES and EE sectors. The experience reflects both the challenges and opportunities derived from integrating green practices in Public Administrations and SMES of Albania and B&H. Obtained results suggest the potential of implemented tools to motivate changes and improve policies at subnational and national sector.

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NOTES

- 1 In the period 2007–2013 IPA implementation was based on five components: transition assistance and institution building, cross-border cooper-



ation (CBC), regional development, human resource development and rural development.

- 2 Acquis is intended as the conditions and timing of the candidate's adoption, implementation and enforcement of all current EU rules.

REFERENCES

[23]

- Better Project. 2013. 'Report on Power System Inventory and Status of RES Deployment in the Balkans.' http://www.better-project.net/sites/default/files/D4.1%20Report%20on%20Power%20System%20Inventory%20and%20Status%20of%20RES%28-E%29%20Deployment%20in%20the%20Balkans_o.pdf
- Council of the European Union. 2006. 'Council Regulation (EC) No 1085/2006 of 17 July 2006 Establishing an Instrument for Pre-Accession Assistance (IPA).' *Official Journal of the European Union*, L 210.
- Energy Community. 2006. 'Treaty.' https://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Legal/Treaty
- European Commission. 2007. 'Commission Regulation No. 718/2007 of 12 June 2007 Implementing Council Regulation (EC) No 1085/2006 Establishing an Instrument for Pre-Accession Assistance (IPA).' *Official Journal of the European Union*, L 170.
- . 2013. 'EVALSED, the resource for the evaluation of socio-economic development.' http://ec.europa.eu/regional_policy/sources/docgener/evaluation/guide/evalsed.pdf
- GRASP. 2015. 'Draft Final Report.' University of Patras, Patras.
- Koeth, W. 2014. 'The New Instrument for Pre-accession Assistance (IPA II): Less Accession, More Assistance?' EIPA Working Paper 2014/W/01, European Institute of Public Administration, Maastricht.
- MED Programme. 2011. 'MED Operational Programme 2007–2013.' http://www.programmemed.eu/fileadmin/PROG_MED/DOCUMENTS_DE_REFERENCE/Page_accueil_sept2010/EN-OP_Med_2012.pdf
- . 2013. 'Summary of Approved Projects: Fifth Call for Targeted Projects.' http://www.programmemed.eu/fileadmin/PROG_MED/Statistiques_appels_a_projets/Nouveaux_projets_cibl%C3%A9s_-_innovation_energy_EN.pdf
- . 2015. 'Programme Manual 2014–2020.' http://interreg-med.eu/wp-content/uploads/2015/07/20150723_Programme-Manual_1st-published-versionCHAP2.pdf
- Wider Project. 2015. 'Summary of Projects and Beneficiaries of Transnational Innovation Voucher Schemes Supporting SMEs.' <http://www.wider-project.eu/pdf/voucher-winners/poster-bosna-herc-tisk.pdf>



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