

## Integrated territorial investments: challenges and opportunities – case study of Romania

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### Abstract

In order to facilitate the delivery of integrated development strategies, the European Commission has identified two separate tools: Community-Led Local Development (CLLD) and Integrated territorial investment (ITI). ITI is an instrument, which has been developed for the delivery of funding in geographical areas with particular territorial features, ranging from specific urban neighbourhoods with multiple deprivations to the urban, metropolitan, urban-rural, sub-regional, and inter-regional levels. The Romanian Partnership Agreement for the 2014–2020 programming period highlighted that Romania will prioritize the implementation of ITI in the Danube Delta Biosphere. In this document, unfortunately, growth poles (GPs) are not specifically considered for ITI implementation at this time, though this new instrument could bring significant benefits to Romania's growth engines. The present paper aims to explore the possibilities of ITI application in Romania's GPs, building on the existing concept of integrated urban development, which is already functional in Romania. The exploration will take into account the manifold problems that have appeared in Romania during the 2007–2013 implementation period, including significant criteria that should be developed in selecting ITI areas: the record of contracting rates and absorption rates as potential options. At the same time, the paper aims to introduce an innovative matrix for prioritization of actions within an ITI, in order to maximize their impact. A case study will be developed for Bucharest – as potential area for ITI implementation – emphasizing the role of climate change indicators within the proposed matrix.

*Keywords: integrated urban development, integrated territorial investments, prioritization, climate change indicators.*



## 1 Introduction

In setting out the delivery framework for the 2014–2020 Structural Funds, the European Commission (EC) has recognized the importance of cities by introducing a “place based” approach to the delivery of EU funds. The proposed delivery mechanisms recognize that while governments and regional administrations will want to set regional policy, the implementation of these policies at a local level needs to reflect local circumstances and challenges in an integrated way to best address relevant challenges.

In order to facilitate the delivery of integrated development strategies, the EC has identified two separate tools. One of them is the Community-Led Local Development (CLLD) instrument, which is deemed appropriate for urban areas with a population of less than 150,000 people, building on the LEADER program that was applied in rural areas in the 2007–2013 programming period.

The second tool, the integrated territorial investment (ITI) instrument, has been developed for the delivery of funding in geographical areas with particular territorial features, ranging from specific urban neighbourhoods with multiple deprivations to the urban, metropolitan, urban-rural, sub-regional, and inter-regional levels.

It is envisaged that these instruments would draw down especially ERDF and ESF funds to support the delivery of projects as part of an Integrated Development Strategy for a defined geographical area. Furthermore, the EC has made provisions to allow an ITI to also be supported by the European Agricultural Fund for Rural Development (EAFRD) and the European Fisheries Fund (EFF).

## 2 Key elements of ITI

ITI is “a territorial delivery mechanism that enables the implementation of a territorial strategy in an integrated manner while drawing funds from at least two different priority axes in the same or different programs” [1].

Using this instrument, associations of territorial self-government units of functional areas will be able to implement integrated projects, and most of all, combine activities financed from different European funds as shown in Figure 1.

ITI will be applied in Romania following the principles of integrated urban development – a concept with a long history generally, although in Romania becoming more popular only recently, catalysed by the country’s accession to the EU and by increased exposure to the practice and policies of urban development in the European space. The concept was introduced as structural funds were redirected to cities based on Integrated Urban Development Plans (IUDPs) and as part of a growing emphasis of the EU’s cohesion policy on cities. Soto *et al.* [2] identify six possible types of it presented in Table 1, applied for settlements in Romania.



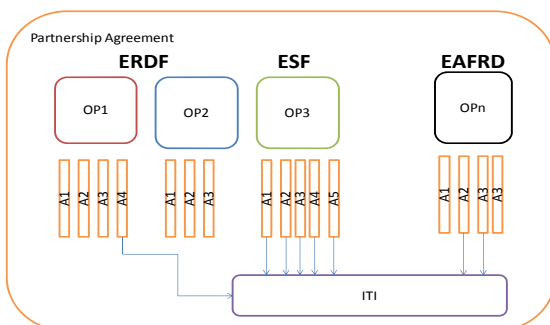


Figure 1: ITI is a tool for integrated development strategies combining funds from different programs/axes.

Table 1: Possible types of ITI.


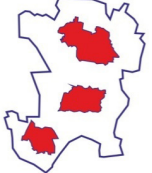

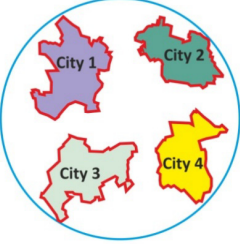

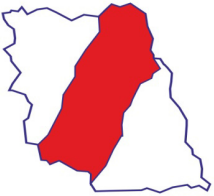
<p>ITI - Single Area Intervention</p> 	<p>“Single area ITIs: ITIs in single neighborhoods or areas of the city. These do not necessarily have to be limited to deprived urban neighborhoods, but could also take place in science quarters, declining industrial areas or brownfield sites, heritage areas, or city centers” [2]. Some case studies in Romania may include: Nusfalau deprived area (social housing building in an area with a problematic Roma minority), Calan brownfield, historical site of Campulung Muscel, Pitesti city center.</p>
<p>ITI - Multiple Area Intervention</p> 	<p>“Multiple Areas of Intervention ITIs: multiple neighborhoods or areas within cities, requiring an integrated approach to certain types of areas spread across the city (e.g., areas of industrial decline, areas of deprivation, etc.)” [2]. Examples in Romania may be large residential areas in major cities with specific dysfunctions related to housing.</p>
<p>ITI - The Whole City</p> 	<p>“Small City ITIs: small and medium-sized service centers and neighboring rural areas” [2]. Several urban centers in Romania could qualify under this category.</p>
<p>ITI - Functional Area With Cities</p> 	<p>“Functional ITIs: i.e., ITIs dealing with functional urban areas, covering more than one city” [2]. In Romania, potential examples may include cities with strong economic synergies like the Bucharest-Ploiesti-Brasov growth corridor, Brăila-Galați, Satu Mare-Baia Mare, etc.</p>

Table 1: Continued.

<p>ITI - Rural-Urban Linkages</p> 	<p><i>“Rural-Urban Linkages ITIs: ITIs dealing with certain key urban-rural linkages”</i> (e.g., transport and business corridors between urban and rural areas, cross-border areas, etc.) [2]. Romanian GPs, particularly those with a high growth potential, as suggested by recent trends (e.g., Cluj and Timișoara) would be fine examples of this ITI type.</p>
<p>ITI - Thematic Group: youth, labour market, etc.</p> 	<p><i>“Thematic or Target Group ITIs: an ITI that prioritizes particular target groups (e.g., migrant populations) or particular themes such as the labor market”</i> [2]. This approach should form a coherent part of an integrated strategy for the entire area. In the case of Romania, a particular theme that requires particular attention and resources may be related to Roma inclusion and integration in society and the labor market.</p>

### 3 Romanian case study: IUDPs implementation and recommendations for ITI

In recent years, a new planning instrument – the IUDP – was used in Romania for GPs, Urban Development Poles (UDPs), and Urban Centres (UCs), as required to apply for funding available through Axis 1 for urban development under the 2007–2013 Regional Operational Program (ROP). This plan includes the same chapters as the City Strategy, but it also goes beyond the city’s administrative boundaries, typically covering the metropolitan areas (defined, according to the legislation, as the 30-kilometer buffer around the main urban centre). IUDPs include a list of projects, based on an estimation of the pre-determined ROP allocation. In practice, however, most proposed projects and interventions have concentrated on the urban centre at the core of a metropolitan area, which has created tensions among local authorities in neighbouring localities. Often times, these stakeholders did not see a direct benefit from joining a particular metropolitan area given that they were not able to attract more funding and, even when they were successful in financing certain interventions, these were limited to social centers or other projects with little potential for economic development.

While the IUDPs have clear gaps, they were the first integrated development exercise that Romania completed during the previous programming period. Especially for GPs, however, they may constitute a solid foundation for ITI implementation [3].

Romania will prioritize the implementation of ITI in the Danube Delta Biosphere [4]. GPs are not specifically considered for ITI implementation at this time, though this new instrument could bring significant benefits to Romania’s growth engines. Moreover, the draft budgetary allocation as of July 2014 raises

serious concerns: the Danube Delta region is to receive over EUR 1 billion, including over 300 million for the Tulcea and Sulina municipalities, while much larger cities (GPs) with a high growth potential would only be allocated around EUR 40 million for 2014–2020. If Romania is to achieve inclusive and sustainable development, the next seven years are truly critical and resources should be prioritized based on each area’s potential to generate growth.

### 3.1 Key lessons learned and implications for Romania’s ITIs based on 2007–2013 IUDPs

There are three key elements of an ITI:

- i) an integrated development strategy for a designated territory including
- ii) a package of actions to be implemented with
- iii) strong governance arrangements.

**3.1.1 The ‘designated territory’** could be a specific geographic area within a region, for example, a Growth Pole (Craiova), a Development Pole (Sibiu), a resort (Băile Herculane), or areas of deprivation within these cities (Ferentari in Bucharest), or it could focus on cross-border city cooperation (Giurgiu-Ruse).

The designated territory approach in the previous programming period targeted GPs, which had to elaborate IUDPs for their metropolitan area.

**3.1.2 The ‘designated territory’** should benefit from an integrated territorial development strategy that addresses the development needs of the targeted area.

Romanian GPs have made important steps toward an integrated development approach through IUDPs, which may be considered potential precursors to the successful development and implementation of an ITI.

**3.1.3 A package of actions (an investment plan)** to be implemented, which should contribute to the objectives of the territorial strategy (e.g., tackling urban deprivation, supporting SMEs, improving the environment, promoting energy efficiency, etc.). An important issue is to draw the funds from at least two different priority axes or programs and ensure that these funds are used in an integrated manner [5].

The IUDPs have action plans which, even if include projects to be financed by other Operational Programs or axes in the same OP, do not have a coordination component for all interventions, but only for projects financed by the ROP under axis 1 (i.e., GPs, Urban Development Poles, and Urban Centers). Often times, the action plan does not include *all* projects needed for the integrated development of the Growth Pole (GP), regardless of the financing source (EU or state budget): e.g., research projects, climate change projects, energy projects, etc.

Discussions with representatives of local authorities and Regional Development Agencies revealed that most of the projects financed by other OP are not included in the IUDPs and only projects with little impact at the regional level were financed, partly due to “first come, first served” selection model used by the Regional Operational Program (except for Axis 1.1 for GPs and Urban

Development Poles). Moreover, projects financed under the IUDP were suggested by the municipalities’ representatives, often without proper consultations with relevant actors.

### 3.2 ITI and Growth Poles

In principle, GPs could fulfil the main criteria to implement ITI – i.e., an integrated strategy for a designated territory, with a clear package of actions with the involvement of a broad range of local partners. Taking into account the manifold problems that have appeared in Romania during the 2007–2013 implementation period, other criteria should be developed in selecting ITI areas: the record of contracting rates and absorption rates are two potential options. Consequently, a successful ITI may follow the logical scheme presented in Figure 2.

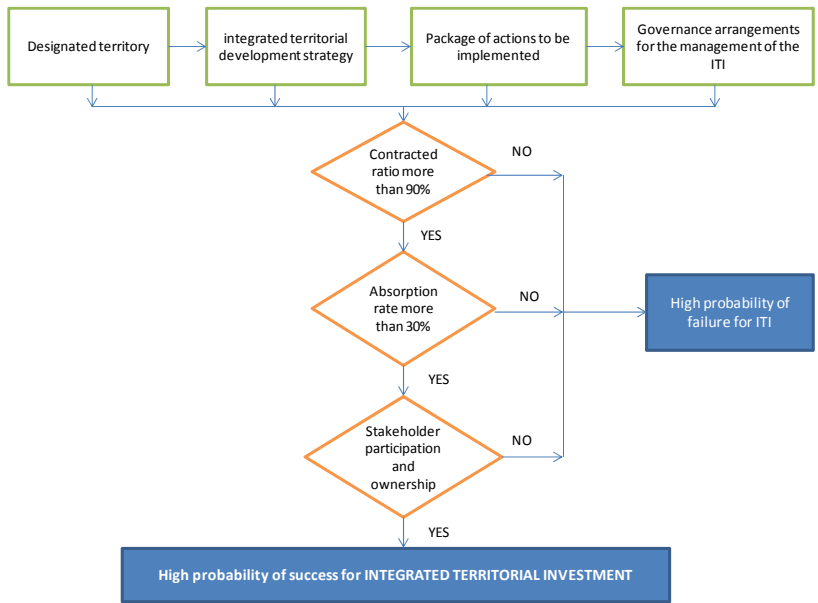


Figure 2: ITI logical scheme.

Main requirements included in the official documents are considered compulsory, but in addition important implementation indices should be included to confer additional credibility:

*Contracted ratio* of the GP represents the ratio between the total contracted value of projects and the initial allocated value for the previous programming period (e.g., 2007–2013). According to Regional Development Agencies where GPs are located, in April 2014, most of the GPs had exceeded the contracted values as presented in Table 2.

Table 2: Contracted ratio for the GPs.

Growth Pole	Contracted ratio (%)
Brasov	111
Cluj Napoca	123,56
Constanta	83,47
Craiova	105,95
Iasi	100,6
Ploiesti	111,44
Timisoara	105,18

The logical scheme proposes a contracted ratio limit of 90%, consequently most of GPs would fulfil this condition.

*The absorption rate* represents the ratio between the reimbursed value and the total allocated value for each GP. The threshold is proposed to be fixed at 30%, close to the current average absorption rate for Romania, which is still the worst performer in the EU in this regard, as of July 2014).

Table 3: Absorption rates for the GPs.

Growth Pole	Total allocated value (MEUR)	Reimbursed value until May, 2014 (MEUR)	Absorption rate (% , May 2014)
Brasov	74.3	13.8	18.6
Cluj Napoca	82.4	30.3	36.77
Constanta	90.32	15.2	16.8
Craiova	95.5	26.1	27.4
Iasi	111.25	36.3	32.6
Ploiesti	97	10.661	11
Timisoara	74.14	12.8	17.3

The absorption rate presented in Table 3 for Romanian GPs was calculated using public data available on the web sites [www.mdrap.ro](http://www.mdrap.ro), [www.inforegio.ro](http://www.inforegio.ro).

Since all seven Romanian GPs were involved in URBACT projects: Ploiesti (Creative clusters), Brasov (LINKS project), Craiova (ENTER.HUB), Constanta (URBAMECO project), Iasi (ReBLOCK project), Timisoara (MILE project), and Cluj (UNIC project) they have previous experience of *multi-stakeholder* Local Support Groups – LSGs.

Consequently, all the three steps may be successful in implementing ITI for all the GPs.

Nevertheless, in order to maximize the impact of the actions included in ITI, it is important to prioritize those that may have a significant impact in the designated area since resources, both financial and human, are limited. As a best practice, stakeholders involved in an ITI should to elaborate an impact matrix, including a detailed assessment of all types of effects (environmental, health, social impacts, etc.) of various actions. When evaluating the impact, both the implementation and operation (post-implementation) phases of the project should be considered. More specifically, impacts are defined as identifiable

changes that demonstrate the extent to which actions included in the ITI have an effect on the target group/beneficiaries. These changes can take place during the project's lifetime (specific impacts) and/or beyond its lifetime (strategic impacts). Performance indicators should be used to determine the success of the action in reaching its objectives.

Table 4 presents a basic impact assessment framework that can potentially be used for selecting projects under an ITI. Within each box, a number from 1 to 10 may be assigned to indicate the *magnitude* of impact; 10 represents the greatest magnitude and 1 the least. The beneficial impacts may be identified with a “+” and detrimental impacts with a “-” sign.

For instance, an infrastructure project may have a mostly negative specific impact on the environment, a positive impact on the social level, negative on the energy level during the action's implementation, etc. However, a research project may have a positive impact on energy, health level, etc. The strategic impact may be positive for both types of actions.

The impact list in the matrix is certainly not exhaustive and it may be completed depending on the type of actions proposed. There is such wide variety of actions that no scheme of impact assessment can be universally applicable. However, the greatest need is not for a single and universally applicable assessment method, but rather for a simple way of summarizing which impacts are considered of greatest relevance by the people conducting the assessment.

Different assessors will seldom come to identical conclusions, but it would be useful to know the basis for the difference. The advantage of the matrix is in its use as a checklist or reminder of the full range of impacts. The matrix and suggested method of use are illustrative and can be subject to improvement, expansion, and adjustment. At the same time, the capacity of potential beneficiaries (i.e., local administrations) should be taken into account – larger cities (e.g., GPs) may afford more complex analyses and may measure indicators more precisely, while smaller urban centers may choose a more basic list. The key point is to encourage local beneficiaries of ITI projects to conduct such exercises and engage in a project selection/prioritization process that is as objective and as rigorous as possible.

#### 4 Case study – ITI Bucharest

The Bucharest case study was selected to illustrate the impact assessment matrix on climate change for an ITI using indicators/parameters attainable through the Earth Observations methods. Bucharest is not defined by legislation as GP even if it is the capital of Romania, the largest city in the country and of course an attraction pole. Nevertheless it has its own strategy [8] that can be used as future foundation for ITI, since the IUDP of the different sectors are not integrated at central level. At the same time Bucharest will benefit from the results of the “Urban Climate Study of Bucharest, Romania” project, developed by Technical University of Civil Engineering Bucharest, in partnership with University of



Table 4: Simplified, illustrative impact assessment matrix for an ITI (two possible actions: Action A<sub>1</sub> Road Infrastructure Projects; and Action A<sub>n</sub> Research Projects in Heritage preservation and impact quantification).

	Impact assessed with SMART indicators	Specific impacts						Strategic impacts							
		A1			An			A1			An				
		...	A1	...	A1	...	An	...	A1	...	An	...	A1	...	An
<b>Environmental impact [6]</b>	Natural environment	Air – Air pollutant emissions	-8	NA	NA	NA	+3	NA	NA	NA	NA	NA	NA	NA	NA
		Water – Discharges in liquid effluents	-5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Soil	– Affected soil area	-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Flora – Rate of de-forestation	-2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Climate change – GHG emissions	-8	NA	NA	NA	NA	+4	NA	NA	NA	NA	NA	NA	NA	
<b>Social impact [7]</b>	Job creation	+8	+3				+3	+7							
	Social inclusion	– Percentage of positively affected most vulnerable or at risk of poverty, children, women, elderly, disabled, unemployed, etc.	+3	+3				NA	NA						
		– Percentages of public and private beneficiaries (applicants and beneficiaries)	+6	+4				+7	+5						
Participation by public, private, and non-profit sector	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
<b>TOTAL</b>															

Table 5: ITI Bucharest's Action Plan projects and their indicators to climate change mitigation based on urban earth observations.

Projects included in the action plan of Bucharest Strategic Concept	Financing program	Link to climate change parameters	Impact – climate change indicators/parameters
<b>Transportation</b>			
Extension of metro line to the attraction areas	Operational Program Big Infrastructure – OPBI	– Reduction of traffic and fuel combustion associated with vehicle use	– Improved air quality from reduced motor vehicle emissions – Aerosol Optical Thickness (AOT) values derived from Landsat images [10, 11]
Bucharest belt connected to the motorways	OPBI and national and local budget	– Reduction of traffic in the city Improving traffic flows	– Improved air quality due to reduced motor vehicle emissions – Aerosol Optical Thickness (AOT) values derived from Landsat images [10, 11]
Pedestrianization of streets in the central area	Regional Operational Program – ROP	– Reduction of CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>2</sub> emissions and fine particles – values derived from Landsat images	– Increased physical activity from walking and bicycling – population distribution – Land Use Land Cover (LULC), LULC change [10] – Improved air quality due to reduced motor vehicle emissions – Aerosol Optical Thickness (AOT) values [10, 11]
Construction of park and ride	National and local budgets	– Reduction of traffic in the city – values derived from Landsat images	– De-congested streets due to removal of unauthorized parking and reduced suburbs traffic – Land Use Land Cover (LULC), Aerosol Optical Thickness (AOT) values [10, 11] – Reduced rate of respiratory diseases – population distribution, – LULC, LULC change values [10]
<b>Buildings</b>			
Thermal rehabilitation of old blocks of flats (built before 1950)	ROP, European Investment Bank – EIB	– Reduction of energy consumption in buildings – values derived from Landsat images – Reduction of CO <sub>2</sub> emissions – values derived from Landsat images	– Decreased heat island effects due to reduced heat storage in the summer and heat losses in the winter – surface temperatures, albedo, emissivity and imperviousness values [10] – Reduced energy consumption of rehabilitated buildings per year (kWh/m <sup>2</sup> ) – LULC, built up density, surface materials, temperatures values [10] – Improved air quality due to reduced fuel emissions from combustion for heating – AOT values [10, 11]



Table 5: Continued.

Projects included in the action plan of Bucharest Strategic Concept	Financing program	Link to greenhouse gas emissions	Impact – climate change indicators/parameters
<b>Green areas</b>			
Improving vegetation quality	Local and national budgets Environment Fund Administration	– Reduction of temperatures	– Decreased heat island effects due to the increased quality of vegetation and reduced temperatures – LULC, surface temperatures and vegetation indices values derived from Landsat images [10]
Increasing vegetated/green areas (e.g. vegetated roofs), urban farming for green infrastructure	Local and national budgets Environment Fund Administration	– Reduction of CO <sub>2</sub> , SO <sub>2</sub> , NO <sub>2</sub> emissions and fine particles – values derived from Landsat images	– Decreased heat island effects due to the increased fraction of vegetation and decreased fraction of imperviousness – LULC, LULC change, fractional land cover, surface materials, imperviousness, vegetation indices [10] – Improved air quality due to vegetation mitigating air pollutant concentrations –AOT, LULC, vegetation indices [10, 11] – Reduced rate of respiratory/cardiovascular diseases – population distribution – Land Use Land Cover, LULC change [10]
<b>Infrastructure</b>			
Finalization and operation of the wastewater treatment plant	OPBI	– Increasing available potable water due to the water scarcity effect – Reduction of CH <sub>4</sub> , an important greenhouse gas in centralized aerobic wastewater treatment	– Improved water quality – Land Use Land Cover (LULC), water indices, water clarity/turbidity estimations, morphometry of water bodies derived from Landsat images [12] – Reduced rate of digestive diseases – population distribution, Land Use Land Cover (LULC), LULC change derived from Landsat images [10]
Modernization of centralized heating supply system in Bucharest	OPBI	– Increasing energy efficiency (thermal rehabilitation of old blocks) – Reducing CO <sub>2</sub> emissions based on mitigation of the heat losses – Reducing heat and water losses in the district heating (DH) network	– Reduced urban heat island effect due to operation with a lower temperature and reduction of heat losses – population distribution, heat maps, heat demands/heat loads for buildings, average heat load densities, (heat density as a function of population density) [13] – surface temperatures, surface albedo, surface emissivity values derived from Landsat images [10] – Reduced heat and water losses –LULC, LULC change derived from Landsat images [10, 14]

Basel, under the framework of the Romanian-Swiss Research Programme 2011–2016 (RSRP 2011). One of the main results of this project is to propose certain urban climate strategies firstly for Bucharest, followed-up by its extension at the national level. The urban climate strategies will account for the reduction of the urban heat island effect, air pollution and heat stress for the improvement of the human comfort. Some of the Earth Observations indicators that will be itemized below are included in the preliminary results of this study in Table 5, characteristic for the subject of climate and developed in correlation with temperature variations and greenhouse emissions [9, 10], parameters such as the Land Use Land Cover classes and changes, vegetation and water indices.

## 5 Conclusions, proposals and recommendations at local level

Despite current policy options and limitations, ITI could still be adopted (informally) at the level of local beneficiaries. Specifically, even if the use of ITI is optional, in Romania it could be deployed for the purpose of integrated urban development, in accordance with Article 7 of the ERDF Regulation. High-performing GPs (in terms of contracting and absorption) may be considered as prime candidates for ITI implementation in the 2014–2020 programming period.

To be more efficient in the prioritization of projects within an ITI, a dedicated matrix, such as the one presented in this article, may be developed in the attempt of quantifying the impact of proposed actions in the designated area. The broader aim is to adopt a more objective, rigorous, and impactful approach to selecting projects with a high value-add to Romania's sustainable and inclusive development. At the same time ITIs including improvement of transportation, energy efficiency of buildings, and inclusion of new and complex green structures can provide opportunities in mitigating climate change.

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