

**Regional Coordination and Support for the EU Central Asia  
Enhanced Regional Cooperation on Environment and Water (WECOOP)**

# **The Green Economy**

**An introduction for policy  
makers, NGOs and researchers  
in Central Asia**



July 2014



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*The European Union is made up of 27 Member States who have decided to gradually link together their know-how, resources and destinies. Together, during a period of enlargement of 50 years, they have built a zone of stability, democracy and sustainable development whilst maintaining cultural diversity, tolerance and individual freedoms*

*The European Union is committed to sharing its achievements and its values with countries and peoples beyond its borders*

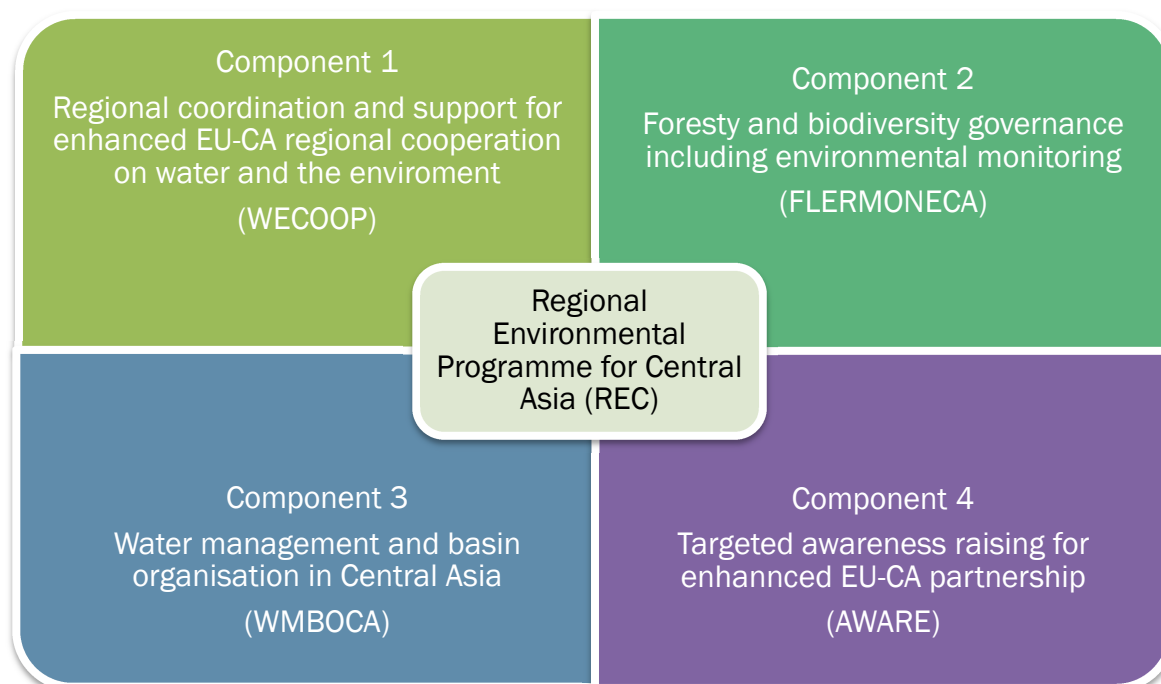
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## Introduction

Climate change, water and environmental issues are global concerns that threaten health, food security, economic and social development. They are complex issues that require enhanced levels of international, regional and national cooperation. They also present significant challenges to policy-makers as they seek to map-out strategies and plans to address the immediate and longer-term threats that these issues pose. The European Union (EU) and Central Asia (CA) have engaged at a number of different levels in relation to these challenges and agreed that as part of the 'EU-Central Asia Strategy for a New Partnership', the environment, water and climate change would form a priority 'pillar' for cooperation. The agreed basis for this cooperation is set-out in the Regional Environmental Programme (REC) for Central Asia. The REC comprises four components:



Over the period 2011 to 2015, EU-supported technical assistance projects working under each of these components have been implemented. The WECOOP project ([www.wecoop-project.org](http://www.wecoop-project.org)) has been running since February 2012 and will end in July 2014.

As part of the current WECOOP project, a number of events, publications, workshops and conferences have been held both in Central Asia and Europe to facilitate information exchange, networking and prioritisation of environmental issues, with a specific focus on where **regional** collaboration can add value.

This brochure is presented as part of the WECOOP project and in response to the considerable interest that has been shown by the countries of Central Asia in the **green economy** approach. It is not an academic paper or comprehensive literature review but is intended to provide middle to senior level policy makers with an entry point to the concept of the green economy, what it means, the questions it raises, key players in the debate and where further information can be obtained. It is anticipated that the green economy approach will continue to attract considerable regional and international attention over the

coming years as policy makers and researchers seek new pathways to sustainable development in the face of climate change, population growth and increasing environmental pressures.

*Green growth is the opportunity of our time. Today, governments have a choice. They can chart new, more sustainable pathways towards a prosperous, inclusive and climate resilient future. Or, they can back conventional forms of development that deepen today's environmental and social problems, and great ecological debts for the future. On the first path lies the promise and potential of green growth.*

Preface to: 'Green Growth in Practice - Lessons from Country Experience'. Green Growth Best Practice, July 2014

## Green Economy, Central Asia And Regional Collaboration

The adoption of a green economy approach may offer the countries of Central Asia a basis for strengthened regional collaboration. The countries in the region have a shared exposure to the negative impacts of climate change, have a number of environmental issues that can only be tackled at a transboundary level and have a number of ongoing national environmental initiatives that could provide the basis for beneficial knowledge sharing.

Whilst the diversity of the countries in the region is acknowledged, a desire to achieve economic growth and development is common goal for all countries. Increasing employment opportunities, generating income growth, providing health and education services, access to transport, energy and clean water air are all common needs. International comparisons drive public expectations and policy makers in all countries in the region face the common challenge of how to balance the sometimes competing needs of economic growth, environmental protection and social equity.

The green economy is an approach that may offer policy-makers a construct around which national approaches to long-term sustainable and equitable development can be achieved. Faced with the realities of climate change and increasing evidence that the continuation of a 'brown economy' approach will only lead to further environmental degradation and ultimately threaten not just economic growth but the future viability of humankind on the planet, the matter is urgent and topical. An increasing number of influential voices are indicating that it is no longer a choice of continuing a 'business as usual approach (BAU)' but that there is now an urgent necessity at a national, regional and global level to find new pathways to economic growth and development.

Against this background the green economy approach has gained considerable traction globally and is now being seen as a very important contribution to the search for new ways of achieving sustainable growth, which is viewed as growth that is environmentally sound and socially equitable.

## Origins Of The Green Economy

The idea of a more sustainable economy has been considered for decades, with a key moment being the publication of the report 'Limits to Growth' by the Club of Rome in 1972. Other reference points along the green economy timeline include the 1987 'Brundtland Report', the 1992 Earth Summit and Agenda 21, the UNEP report 'Towards a Green Economy and the Rio+20 Summit'.

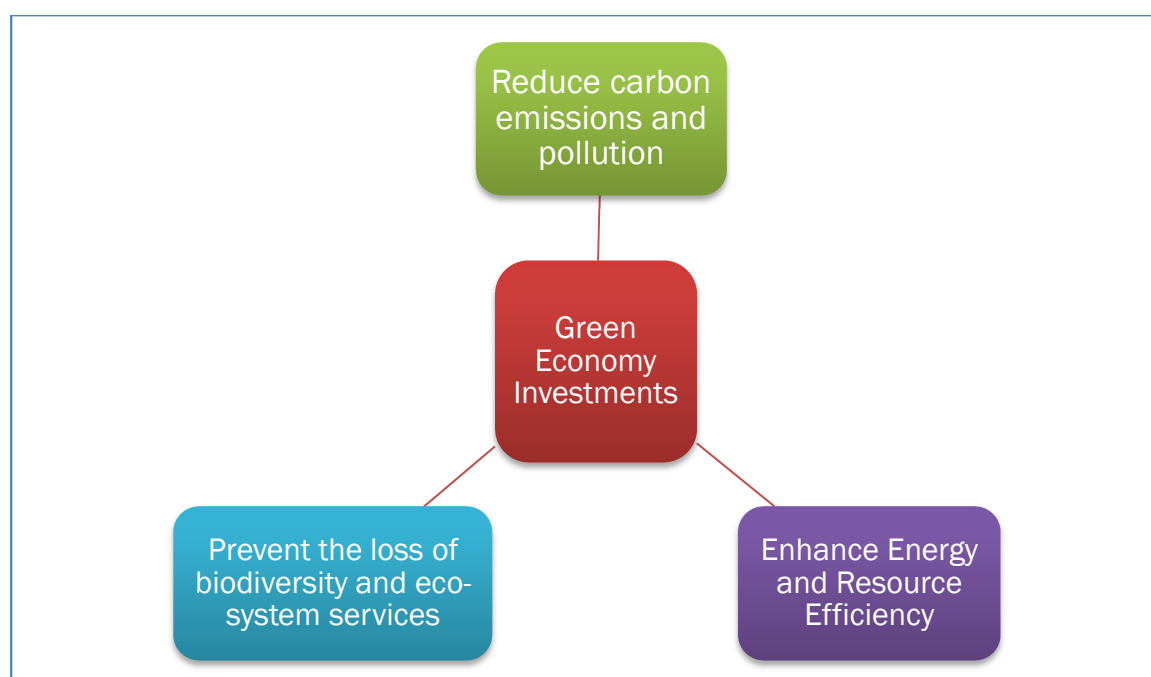
## Defining The Green Economy

In the last two decades the world has experienced several concurrent crises: climate, biodiversity, energy, food, water, and more recently, the global financial and economic crisis. Among the causes of these events, the UNEP identifies the mis-allocation of capital, which contributes to strengthening economic sectors that are negatively impacting the environment and to weakening those that support natural capital (UNEP, 2011).<sup>1</sup>

In light of these trends and to more effectively move towards sustainable development, several organisations and international actors have developed the concepts of Green Economy (GE) and Green Growth (GG) as action-oriented approaches, or vehicles, to transition to a more sustainable economy. More specifically, at a visionary level, the UNEP considers the green economy as:

*'An economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities'* (UNEP, 2011).<sup>2</sup>

At an operational level, the green economy is seen as one whose growth in income and employment is driven by investments that address three key areas related to emissions, pollution, resource efficiency, biodiversity and eco-system services:



<sup>1</sup> United Nations Environment Programme (UNEP) (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*, Nairobi: UNEP.

<sup>2</sup> Ibid.

Similarly, the OECD defines green growth as an approach aimed at:

*‘fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies’* (OECD, 2011).<sup>3</sup>

These definitions highlight the mandates of UNEP and the OECD. The former prioritises environmental preservation for poverty reduction, whilst the latter emphasises economic growth through efficiency improvements. Several other similar definitions exist (e.g. circular economy), each emphasising specific facets of a greener and more resilient economy.

As action-oriented approaches, the application of green economy and green growth principles at a national level is done through the implementation of specific policy and investments, which are adapted to the country context (e.g. political, socio-economic context) and national development priorities. In this respect, UNEP indicates four priority areas for green policy-making, namely (UNEP, 2011)<sup>4</sup>:

- *Addressing environmental externalities and existing market failures*, where the production or consumption of goods and services has negative effects on third parties and the environment whereby the cost is not fully reflected in market prices.
- *Limiting government spending in areas that deplete natural capital*, such as subsidies that stimulate unsustainable production, resulting in the over-exploitation of natural resource stocks.
- *Promoting investment and spending in areas that stimulate a green economy*, i.e. in areas that (a) promote innovation in new technologies and behaviours that are vital to green markets; (b) expand infrastructure that is required for certain green innovations to flourish; and (c) foster infant green industries.
- *Establishing a sound regulatory framework* of legislation, institutions and enforcement.

## A Green Economy for Socially Inclusive Growth

The challenge to policy makers is to find new ways of achieving growth that is both environmentally sustainable and socially inclusive:

*‘Inclusive green growth will not happen on its own, deliberate policy and investment decisions need to be taken at all levels, local to global, to ensure that economic growth is in fact green and inclusive’* (G20 Development Working Group ‘A Toolkit of Policy Options to Support Inclusive Green Growth’, July 2013).

The policy challenge therefore extends from a national to a regional and global consideration of how growth imbalances between different countries and regions can be addressed in the context of green economy, where multi-lateral investment banks and development agencies can or should intervene and where alignment of policy, experience sharing and adherence to common targets and approaches may be appropriate or required.

At a national level particular attention has been placed on Green Jobs, or *‘those jobs maintained or created in the transition process towards a green economy that are either provided by low-carbon intensive industries (enterprises) or by industries (enterprises)’*

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<sup>3</sup> Organisation for Economic Co-operation and Development (OECD) (2011). Towards Green Growth. Paris: OECD.

<sup>4</sup> Ibid.

whose primary output function is to greening the economy' (IILS 2011)<sup>5</sup>. In addition to having a positive impact on the environment, a job can be defined 'green' only if it is also decent. In fact, jobs in low-carbon or green industries are not necessarily safe and healthy jobs with adequate remuneration and social coverage. The Green Jobs Report jointly published by UNEP, ILO, the International Trade Union Confederation (ITUC) and the International Employers Organization (IOE) (UNEP et.al. 2008)<sup>6</sup> highlights that in addition to environmental considerations green jobs also need to reflect 'decent work'. Decent work is thereby understood as

- Productive and secure work;
- Ensures respect of labour rights;
- Provides an adequate income;
- Offers social protection; and
- Includes social dialogue, union, freedom, collective bargaining and participation.

Concerning access to natural resources, the transboundary nature of environmental issues makes this a significant dimension of the green growth policy challenge. In this context green growth in Central Asia becomes a regional discussion where there is both necessity and significant benefit to be gained from enhanced regional collaboration. In this context, aspects to consider include:

- Technology transfer requires knowledge sharing;
- Natural resource management can be optimized when international and bi-lateral agreements are deployed.

## The Green Economy And Sustainable Development

In 1987, the World Commission on Environment and Development (WCED) defined **sustainable development** as '*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*'. This definition became a widely shared vision of human progress during the 1992 UN Conference on Sustainable Development, when Agenda 21 was adopted as a plan for achieving sustainable development in the 21st century (UN, 1992).

Ten years later, the outcome document of the 2012 UN Conference on Sustainable Development, also known as Rio+20, referred to a **green economy** as '*one of the important tools available for achieving sustainable development*' (UN, 2012). In particular, the document encouraged each country to:

*'.....consider the implementation of green economy policies in the context of sustainable development and poverty eradication, in a manner that endeavours to drive sustained, inclusive and equitable economic growth and job creation, particularly for women, youth and the poor'* (UN, 2012).

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<sup>5</sup> International Institute for Labour Studies (IILS) (2011). Defining "Green" – Issues and Considerations. EC-IILS Joint Discussion Paper Series No. 10.

<sup>6</sup> UNEP, ILO, International Employers Organization (IOE), and International Trade Union Confederation (ITUC) (2008). Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World. Nairobi: UNEP.



A green economy, seen as an **action-oriented approach to reach sustainable development**, is expected to provide a more integrated, holistic and context-sensitive framework for the elaboration, assessment, implementation, monitoring and evaluation of strategies and policies. In this sense, the green economy paradigm is conceived as a tool that can support the shift towards more sustainable production and consumption at the national level, by fully incorporating the environment in the policy making process, in line with global priorities for sustainable development. Indeed, green economy policies and investments can be tailored to the national context, and assessed with the help of a number of tools, including indicators, scenarios and simulation models, which allow for a holistic approach to sustainable development.

## Global And National Perspectives On The Green Economy

At a global level, an increasing number of influential voices are indicating that it is no longer a choice of continuing a 'business as usual approach' but that there is now an urgent necessity to find new pathways to economic growth and development. This global perspective is being driven by:

- The anticipated growth in human population to 9 billion by 2050;
- Responding to the challenge of climate change;
- Responding to the increased level of resource consumption, energy use, greenhouse gas emissions and destruction/degradation of ecosystems associated with population and consumption growth;
- Responding to scientific research indicating that environmental degradation may already have exceeded safe levels.

The trends mentioned above are driven by patterns at a national level, and influence the economic performance and social development of all countries. Green economy policies and tools should be adapted to national specificities in order to identify interventions that would turn sustainability challenges into opportunities. In particular, the integration of green economy principles and policies into the development planning process of Central Asian countries is likely to support national policymakers in identifying key sustainability issues and turning them into opportunities for the achievement of climate resilient, sustainable development.

In fact, Central Asian countries are confronted with several environmental challenges that have negative impacts on national economic growth and social well-being. These include land and soil erosion due to intensive agricultural practices; inefficient water supply; lack of access to modern forms of energy in certain areas; heavy impact of natural disasters; inefficient use of energy, among others. Starting from the identification of environmental challenges (and their relation to the socioeconomic sphere), integrated green economy policies could be designed and implemented at a national level to maximise resource efficiency, reduce environmental pressures, and improve the well-being of the population.

In general, there are two main types of GE interventions that can support countries, depending on their socio-economic and environmental context:

- *For **Industrial sectors***: embedded in the conventional (carbon-intensive) structure that has contributed to modern lifestyles and, as proved by various studies, are being challenged by rising energy prices and externalities. Such sectors have to aim for a transition to energy efficient technologies and conservation practices that will advance the way to a greener growth. Major steps are necessary to retrofit and replace old 'brown' economic structures, to develop innovative regulations, and to introduce new 'green' economic structures.

- For **Natural capital-based sectors**: heavily reliant on the availability of natural resources (stocks and flows), these sectors can thrive and be sustainable only if resource extraction is managed in a manner that maintains ecosystem balance. Over exploitation of natural resources should be avoided to curb impacts on ecosystem services, which ultimately undermines productivity and competitiveness.

#### 'DECOUPLING'

A pressing question that exists in relation to green growth is whether the link can be broken between economic growth, natural resource use and environmental impact. The term decoupling refers to breaking the link between 'environmental bads' and 'economic goods'. Conventional thinking assumes that the level of economic output is positively related to human well-being and therefore the growth in that output will increase human well-being. However, if economic growth results in the depletion of environmental resources and negative environmental impacts, in the absence of decoupling, then any well-being increase from increased incomes may be offset by reductions in well-being from environmental damage. Work undertaken by the UNEP and others has increased the level of evidence that supports the argument that in fact a green economic approach does not inhibit growth or employment opportunities. In fact, there is evidence that a number of green sectors provide opportunities for investment, growth and jobs. However, it is also acknowledged that such investment to occur, new enabling conditions are required which in turns put pressure on governments and policy makers to come up with innovative and new policy packages.

### Why Green Economy And Green Growth?

Green Economy (GE) is seen as an action-oriented approach to sustainable development. Green Growth (GG) is growth in a GE, and the performance of the social, economic and environmental pillars (or dimensions) of a GE are measured with Green Economy Indicators.

The above means that a discussion around GE/GG is necessarily one about policies and their systemic outcomes.

As an example, it is found that a greener economy is needed because Business As Usual (BAU) investments (e.g. expansion of the road network) have considerably increased over time. These investments carry high operation and management (O&M) costs at a social, economic and environmental level. For instance, ever-larger infrastructure generally requires increasingly larger maintenance (e.g. paved roads facing higher traffic congestions and heavier vehicles); the use of fossil fuels, e.g. due to the expansion of road transport and congestion, leads to air pollution (e.g. PM concentration) that in turn causes health (e.g. respiratory) diseases; finally, natural resources are needed to allow economies to run and expand, including fossil fuels and minerals, which are being irreversibly depleted. As a result, BAU growth carries growing future costs, both for maintenance (to keep the economic machine running) and for expansion. In this context, green economy interventions are needed to reverse this trend. Improving resource efficiency, lowering air emissions, and protecting the environment is expected to lower the organisation and maintenance costs of our economy, increase resilience and possibly also future economic growth (when compared to a BAU case). Necessarily, future growth will need to be assessed more broadly, against the criterion of whether it satisfies demands for higher living standards and well-being for a larger global population, while adapting to tightening environmental and natural resource constraints.

In order to maximise the effectiveness of national policy making processes, and create the enabling conditions for green growth, an integrated framework is needed for the formulation, monitoring and evaluation of interventions. This framework is not of simple formulation and implementation, mostly because while the green economy and green growth concepts are a recent creation, the interventions they advocate have been known for a long time (e.g. energy and water efficiency investments). As a result, the main contribution of a green economy approach has been identified as being the *integration* of sectoral interventions in a coherent, cross-sectoral framework of analysis that accounts for social, economic and environmental outcomes (with the latter being considered of secondary importance in the context of planning for sustainable development and the MDGs).

## The Green Economy Is Not Only For Rich Countries

Another discussion point that has occurred in relation to the green economy relates to the view that it is an approach that only wealthy countries can afford or is in some way a strategy to restrain development and restrict economic growth in developing countries. When considering this question, it is useful to refer to the two main strategic axes of a green economy approach:

- 1) **Improving Resource Efficiency** – which primarily addresses consumption and production issues which can be more of a concern to developed economies.
- 2) **Better Management of Natural Resources** – which is very often more of a concern for developing economies.

The adoption of a green economy approach is applicable to both developed and developing economies but the priorities identified and strategy adopted will be balanced differently between resource efficiency and management of natural resources. The increasing number of case studies that are available from both developed and developing countries is supportive of the viewpoint that the green economy is not only for rich countries.

Central Asian countries are already implementing green economy policies that are aimed at improving national economic performance and social well-being. For example, the government of Tajikistan recognises the importance of energy efficiency and renewable energy policies for improving energy security and reaching universal access to modern form of energy. The government has implemented several green economy initiatives in this field, such as a project on reduction of electric power losses in the Barki Tojik OJSHC's networks, tax benefits for the construction of hydropower plants, development of small hydroelectric power plants (adoption of the Long-Term Programme for Small HEPPs Construction for 2009-2020); and enhanced use of renewable energy sources (adoption of the Comprehensive Target Programme for Extensive Use of Renewable Energy Sources for 2007-2015)<sup>7</sup>.

## Types of Green Economy Policies

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<sup>7</sup> Government of Tajikistan (2012) "National Review: Towards a 'Green' Economy in Tajikistan", elaborated in preparation of the 2012 UN Conference on Sustainable Development

There are a number of different types of **policy instruments** that national governments can use in their efforts to improve the environment. These can be grouped under four generic headings:

- **Capital investment** that is based on green economy principles related to housing, power generation, transport and related infrastructure. For example, the government of Uzbekistan is planning to build a 100-MW solar power plant in Samarkand to promote large-scale solar energy development in the country. The plant will be the largest in Central Asia, and one of the largest in the world. Currently, about 90% of the country's power needs are fulfilled with fossil fuel-based energy. The target set by the government is to generate 21% of its energy needs from renewable sources by 2031<sup>8</sup>.
- **Laws** that provide a legal framework that is supportive of a green economy and can address issues such as environmental performance and technology standards. For example, the government of Tajikistan has promulgated a number of environment-related laws, including a Law On Environmental Protection (2011); a Law On Environmental Monitoring (2011); a Law on Ecological Information (2011); a Forest Code (1993); a Land Code (1996); and a Water Code (2000).
- **Incentives and disincentives** such as deposit refund schemes, subsidies (including the removal of environmentally harmful subsidies). For example, Payments for Ecosystem Services (PES) are solicited to users of natural resources in Tajikistan, with aim to ensure the preservation of resources. The funds derived from PES are reinvested through the Environmental Protection Fund to implement, under the guidance of the Committee for Environmental Protection, environmental protection activities<sup>9</sup>.
- **Public awareness** to educate, inform and support the public on the rationale behind a green economy approach, what it involves, why certain policies are required, the costs and benefits involved and where changes both at societal and individual level are required. The Regional Environmental Centre for Central Asia (CAREC) and the European Union have published in 2009 a review of 'Best practices on education for sustainable development in Central Asia'. The document collects several examples of successful projects, such as the 'Course on Sustainability for Kazakhstan high-level governmental officials', the 'School project on Use of Resources and Energy – SPARE' in Kyrgyzstan; or the development and publishing of the manual 'Environment' for teachers of secondary schools in Turkmenistan<sup>10</sup>.



**Policy packages** combine a number of these policy types to enhance and increase their overall effectiveness.

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<sup>8</sup> <http://www.adb.org/news/adb-help-uzbekistan-build-central-asias-first-solar-power-plant>

<sup>9</sup> Government of Tajikistan (2012) "National Review: Towards a 'Green' Economy in Tajikistan", elaborated in preparation of the 2012 UN Conference on Sustainable Development

<sup>10</sup> CAREC & EU (2009), The Best Practices on Education for Sustainable Development in Central Asia. Review. Available at: [http://www.carecnet.org/assets/files/MAY%20publications/Best\\_practices\\_eng.pdf](http://www.carecnet.org/assets/files/MAY%20publications/Best_practices_eng.pdf)

## Low Emission Development Strategies

Low carbon development strategies (LEDS) have also been referred to as low carbon development strategies (LCDS), low carbon growth plans (LCGP) and climate resilient growth strategies (Clapp et al. 2010; Tilburg 2011). Climate compatible development (CCD) is often used along with LEDS however CCD, encompasses low emission development and climate resilient development.

LEDS are described as ‘forward-looking national development plans or strategies that encompass low-emission and/or climate resilient growth’. They include efforts such as roadmaps, nationally appropriate mitigation actions (NAMAs), technology needs assessments (TNAs) and similar actions. Low emission planning is associated with multiple stages, is complex and costly. It therefore needs to be supported by access to high quality knowledge, information sharing and structured decision making and resource allocation. A number of networks are active in the support of LED including:

- International Renewable Energy Agency (IRENA)
- Climate and Development Knowledge Network (CDKN)
- Global Green Growth Initiative (GGGI)

There are also multiple regional LED networks but not in Central Asia, which could be a point of interest for further consideration in the framework of regional environmental projects such as the Water and Environmental Cooperation Platform (WECOOP).

## Natural Capital & Ecosystem Services

For economists, planners and policy makers to support the transition to a green economy, generating a better understanding of nature’s true value and fundamental contribution to economic development is required. This can help to switch thinking from both the public and private sector that considers the environment and an obstacle to growth. The idea of natural capital is relatively new but has been discussed at the first World Forum on Natural Capital that was held in Edinburgh in 2013 (<http://www.naturalcapitalforum.com>). Natural capital is broadly understood to mean placing an economic value on nature to recognise its full value. However, critics of this approach argue that valuing natural capital will not stop environmental degradation and will instead benefit a minority of actors who will trade nature on financial markets. For example, some argue that natural capital could be used as a platform for biodiversity offsetting which could encourage environmental destruction i.e. a company could compensate for environmental damage in one area by buying credits based on the preservation of another area of biodiversity. Others have raised the some of the social issues around the adoption of a natural capital approach, particularly in developing countries where governance and property rights may not be fully applied.

## Measuring the Green Economy

Rio+20 has highlighted how important it is to measure progress towards sustainable development. In this respect, indicators are a crucial tool to identify and prioritize issues and to assess the suitability of proposed policy interventions.

A Green Economy indicator framework has been proposed by UNEP (2014)<sup>11</sup> to inform each step of the policy making progress. This way indicators are used both to assess historical

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<sup>11</sup> UNEP (2014). “Using Indicators for Green Economy Policymaking”. United Nations Environment Programme (UNEP), 2014.

trends (or the progress already made towards sustainable development) and future development paths (by identifying and assessing the likely impacts of policy intervention).

Within that framework, also shared by the partners of the Green Growth Knowledge Platform (GGKP), indicators can be divided into three main categories:

- *Agenda-setting indicators*, that seek to facilitate the identification of issues. Regardless of the nature of the problem to be solved (environmental, social, or economic), indicators are selected that can best identify the problem and its (often many and varied) causes and effects.
- *Policy formulation indicators*, to assess the potential cost and performance of various interventions options that could be utilized to solve the issue.
- *Policy evaluation indicators*, to assess the success of policy interventions, after their implementation. Impacts in this case are estimated using an integrated approach, which includes the development of (1) human well-being, especially if public policies are involved, and (2) other operations in the business if the private sector is involved.

## Recommendations

Central Asian countries are already actively engaged in creating the enabling conditions for the transition to a green economy. Taking into account the environmental challenges faced by Central Asian countries, and acknowledging the current efforts towards the achievement of sustainable development goals, it is possible to formulate some key recommendations to influence future green economy activity in the region. These can be summarised as follows:

### **Research and development**

- The formulation of policies on green innovation should go hand in hand with the development of publicly funded research and development programmes. In Kyrgyzstan, for example, the Central Agency for Development, Investment and Innovation (CADI) could play a central role in coordinating research efforts on green technologies. Research should focus especially on the application, processes and techniques to apply these technologies to the local context, including through the establishment of testing and demonstration facilities.
- A specified annual budget should be assigned to research activities on green innovations. This is particularly true for Kyrgyzstan, where only 0.11% of the GDP is devoted to research and development (10 times less than in other CIS countries) (INCREAST, 2012).
- Funding allocation across project phases, also depending on the stage of development of the technology (and/or innovation) should be introduced in a balanced way, covering from R&D to demonstration, with a component for training as well. Once technical solutions are found, considerable gains can be achieved in the deployment and diffusion phase, especially when private funding will become more present. Funding for the deployment of new technologies should go hand in hand with the upgrade of existing infrastructure (e.g., the electric grid, water distribution pipelines).
- More research is needed to update current environmental licenses, permits, norms and standards. Adequate regulations constitute one of the key enabling conditions for the

transition to a green economy. The standard-setting activity should be supported by solid scientific evidence, and conducted through a systemic perspective, as well as the engagement of a variety of stakeholders at all levels. A virtuous example is the "Energy Efficiency 2020" programme adopted by Kazakhstan in 2013. The plan, which seeks to reduce energy use by 10% every year until 2015, has led to the adoption of 3,000 energy standards that will guide energy audits in residential and industrial buildings<sup>12</sup>.

### ***Policy formulation, monitoring and evaluation***

- An integrated policymaking (IP) approach should be adopted to ensure the understanding of cross-sectoral implications of green innovations. Positive and negative externalities and possible unintended consequences of innovative policies need to be carefully assessed, with the support of national and international expertise and case studies. For example, in June 2012 the Government of Turkmenistan adopted a National Climate Change Strategy, which covers mitigation and adaptation issues. A cross-sectoral approach has been adopted for the development of the strategy. In particular, the link between water resources management, agricultural production, food security and economic growth is clearly defined in the document.
- Bottom-up as well as top-down processes are key for green innovation policies to have the desired impacts. Therefore, multi-stakeholder processes (MSP) should be adopted in the policy formulation phase to capture essential knowledge that is often dispersed within the system boundary (i.e. country and its sub-regions). For example, a multi-stakeholder approach was followed for the selection of pilot projects on water efficiency in agriculture in Kazakhstan, under the framework of the Water Productivity Improvement Project. The projects aimed at building capacity of farmers on water efficiency technologies and practices, including: Selection of technological irrigation schemes; land leveling; alternate furrow irrigation; mixing organic fertilizers and mineral fertilizers with irrigation water; crop irrigation regime; inter-row cultivation; irrigation scheduling.
- The correct set of indicators should be established to monitor and evaluate impacts of green innovations within and across sectors. Indicators should be created for (1) agenda setting (i.e. to identify potentially harmful trends); (2) policy formulation (i.e. to measure the level of effort in introducing and maintaining green innovations); and (3) policy monitoring and evaluation (i.e. measurement of the state of the environment as well as socio-economic progress, including employment, wellbeing, sectoral production, resource efficiency etc.). An example of a project that supports indicators development and use is the European Union funded initiative for the development of a Shared Environmental Information System (SEIS). The SEIS is expected to modernise and simplify environmental data collection and sharing processes across Central Asian countries, in order to facilitate the assessment and implementation of environmental policies<sup>13</sup>.
- The synergy of efforts from relevant institutions and stakeholders should be strengthened through the establishment of appropriate communication and collaboration

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<sup>12</sup> <http://renewablemarketwatch.com/news-analysis/136-kazakhstan-solar-and-wind-power-market-new-feed-in-tariffs-and-very-good-opportunities-for-2014>

<sup>13</sup> CAREC, EU & Swiss Confederation (2013), Analytical Review. Towards implementation of Shared Environmental Information System (SEIS) in Central Asia.

channels. Increased collaboration would help reduce the level of overlap between separate policies, thereby promoting an organic growth guided by green innovations.

### ***Implementation of green innovative interventions***

- Innovative, green technologies that help improve efficiency in the distribution and consumption of natural resources are of utmost importance to guide the transition to a green economy, boost sustainable development, while ensuring energy security at national and regional level. For example, the government of Kyrgyzstan is working on the development of building codes, especially for the creation of a catalogue of technical solutions for the thermal protection of buildings. As result of these activities, which are supported by the Turkish International Development Agency, a new school in the town of Osh has become Central Asia's most energy efficient building. The school, which host 970 children, consumes 50% less energy than similar structures, corresponding to US\$ 20,000 annual energy savings<sup>14</sup>.
- Various policies have been approved by the respective Governments to attract investments on key sectors such as housing, transport and tourism. Green economy principles should be taken into consideration during the implementation phase of these policies. For example:
  - The development of the tourism sector should respect relevant provisions on sustainable exploitation of natural resources and protection of ecosystem services.
  - Clear provisions on the introduction of advanced resource-saving technologies should be included into policies for the development of the manufacturing sector (e.g., aluminium production in Tajikistan).
  - The introduction of innovative technologies and processes should be set as a prerequisite for investing in the housing and transport sectors in all countries, and regulations should be adopted on climate-proof and environmentally friendly buildings and infrastructure.
- High medium to long-term returns on green investments should be emphasized into stimulus programmes for the attraction of national and foreign capital. Investors should be tempted by the economic advantages of sustainable production models compared to aggressive short-term strategies that tend to exhaust natural resources, with negative long-term consequences for the economy, the society and the environment.

### ***Capacity-building***

- Capability building programmes should be conducted for governmental agencies and institutions on green innovations, focusing in particular on the enabling conditions needed to facilitate the introduction of innovative technologies and processes.
- Prior to the introduction of green innovative technologies, training activities should be planned to build in-country capacity to install, implement, operate and maintain technology. The existence of a national specialised expertise in the field of green innovations is an essential prerequisite to ensure the sustainability of interventions. For example, capacity building is a central component of sustainable land management

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<sup>14</sup> <http://www.undp.org/content/undp/en/home/ourwork/environmentandenergy/successstories/kyrgyzstan-energy-efficient-school-offers-national-lessons/>



(SLM) projects that are being implemented in Tajikistan. In particular, training is provided to local governments and civil society on the adoption of SLM principles and the use of water and energy efficient technologies in agriculture<sup>15</sup>.

Information dissemination, outreach and awareness-raising campaigns should be carried out to increase the responsiveness of the entire society to green innovation advantages, thereby reducing community resistance to new practices. For example, the Regional Centre for Renewable Energy Sources (RCRES) was established in Uzbekistan with the aim of raising awareness on the benefits of renewable energy and accelerate renewable energy technology deployment across Central Asian countries.

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<sup>15</sup> UNDP-GEF project “Demonstrating Local Responses to Combating Land Degradation and Improving Sustainable Land Management in Southwest Tajikistan”. Final Evaluation, 2012.

## References/Further Reading

- 'A Global Green New Deal: Rethinking the Economic Recovery', a report commissioned by UNEP (Barbier 2010)
- 'Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication' published by UNEP (2011)
- 'Working Towards a Balanced and Inclusive Green Economy - A United Nations System-wide Perspective', developed under the United Nations Environment Management Group (EMG 2011)
- 'Working Towards Sustainable Development: Opportunities for Decent Work and Social Inclusion in a Green Economy' by the International Labour Organization (ILO 2012)
- 'Resilient People, Resilient Planet: A Future Worth Choosing', a report by the UN Secretary-General's High Level Panel on Global Sustainability (2012)
- 'Policies for Supporting Green Industry', published by the United Nations Industrial Development Organization (UNIDO 2011)
- 'Towards Green Growth', a strategy document by the Organisation for Economic Co-operation and Development (OECD 2011)
- 'Inclusive Green Growth: The Pathway to Sustainable Development', published by the World Bank (2012)
- Thematic Green Economy Guidebooks, published by UN DESA (2012-2013)
- 'Green Growth in Practice. Lessons from Country Experiences', Global Green Growth Best Practice. (GGGB July 2014)
- 'Low-Emission Development Strategies (LEDS)', published by OECD and International Energy Agency (2010)
- 'Paving the way for low-carbon development strategies', published by the Energy Research Centre of the Netherlands (2011)
- A Toolkit of Policy Options to Support Inclusive Green Growth, published by the OECD and World Bank and originally a submission to the G20 Development Working Group. (July 2013)
- Green Growth Knowledge Platform (CGKP) Scoping Paper: Moving towards a Common Approach on Green Growth Indicators (2013).

## Annex 1: Sources Of Further Green Economy Information

Sources of Information		
<b>United Nations Environment Programme</b>	<a href="http://www.unep.org/greeneconomy/">http://www.unep.org/greeneconomy/</a>	<p>The UNEP-led Green Economy Initiative, launched in late 2008, consists of several components whose collective overall objective is to provide the analysis and policy support for investing in green sectors and in greening environmental unfriendly sectors. Within UNEP, the Green Economy Initiative includes three sets of activities:</p> <ol style="list-style-type: none"> <li>1. Promoting the <b>Green Economy Report</b> and related research materials, which analyse the macroeconomic, sustainability, and poverty reduction implications of green investment in a range of sectors from renewable energy to sustainable agriculture and providing guidance on policies that can catalyze increased investment in these sectors.</li> <li>2. Providing <b>advisory services</b> on ways to move towards a green economy in specific countries.</li> <li>3. Engaging a wide range of <b>research</b>, non-governmental organizations, business and UN partners in implementing the Green Economy Initiative.</li> </ol>
<b>Green Growth Knowledge Platform (GGKP)</b>	<a href="http://www.greengrowthknowledge.org/">www.greengrowthknowledge.org/</a>	GGKP's mission is to enhance and expand efforts to identify and address knowledge gaps in green growth theory and practice.
<b>Green Growth Best Practices Initiative</b>	<a href="http://www.ggbp.org">www.ggbp.org</a>	Set up to accelerate learning and to inform the design of green growth programmes by undertaking analysis of early experiences.
<b>Climate Smart Planning Platform</b>	<a href="http://www.climatesmartplanning.org">www.climatesmartplanning.org</a>	World Bank and Global Green Growth Institute are implementing partners of this site which aims to support practitioners and modellers in developing climate-resilient, low-carbon analysis and planning.
<b>Climate and Development Knowledge Network</b>	<a href="http://www.cdkn.org">www.cdkn.org</a>	CDKN supports decision makers and designing climate compatible development by combining research, advisory services and knowledge management in support of local owned and managed policy processes.
<b>European Climate Foundation</b>	<a href="http://www.europeanclimate.org">www.europeanclimate.org</a>	The European Climate Foundation (ECF) was established in early 2008 as a major philanthropic initiative to promote climate and energy policies that greatly reduce Europe's greenhouse gas (GHG) emissions and to help Europe play an even stronger international leadership role to mitigate climate change.
<b>Green Economy Coalition</b>	<a href="http://www.greeneconomycoalition.org">www.greeneconomycoalition.org</a>	The Green Economy Coalition is a diverse set of organisations and sectors from NGOs, research institutes, UN organisations, business and trade unions.

Sources of Information		
<b>Global Green Growth Institute</b>	<a href="http://www.gggi.org">www.gggi.org</a>	Founded on the belief that economic growth and environmental sustainability are not merely compatible objectives; their integration is essential for the future of humankind. Works with partners in the public and private sector in developing and emerging economies to put green growth at the heart of economic planning. Headquarters in Seoul.
<b>The Economics of Ecosystems and Biodiversity</b>	<a href="http://www.teebweb.org">www.teebweb.org</a>	The Economics of Ecosystems and Biodiversity (TEEB) is a global initiative focus on drawing attention to the economic benefits of biodiversity including the growing cost of biodiversity loss and ecosystem degradation. TEEB presents an approach that can help decision makers to recognise and capture the values of ecosystem services and biodiversity.