

## RECENT ECONOMIC DEVELOPMENTS AND CHALLENGES IN GEORGIA

### *Georgia, an emerging economy*

- a) Following the Rose Revolution of November 2003, the GoG has carried out major economic and governance reforms and made great strides in improving its economy, ousting corruption<sup>1</sup> and promoting democratic governance. Forward-looking, governments have created an empowering, liberal business environment (deregulation, privatization and limiting the role of the government on the economy), making Georgia one of the best destinations in the region for investors, on the basis of its business infrastructure, financial, legal and professional services, and its low and simple tax system<sup>2</sup>.
- b) Georgia successfully attracted foreign direct investments (FDI), with a pick of ... billion USD in 2007, growth reaching approximately 11% in the period 2006-2007. Supported by numerous governmental programs and donor assistance, investments have resulted in significant improvements to the country's infrastructure (in particular in the electricity sector and the transportation sector with rehabilitation of roads and railway) and services (especially in the banking sector) laying the foundation for improvement of living standards of citizens (universal electricity access almost achieved) and further economic development.
- c) Georgia capitalized on its strategic position as the major corridor between South Caucasus, Europe and Central Asia. The construction of the Baku-T'bilisi-Ceyhan oil pipeline, the Baku-T'bilisi-Erzurum gas pipeline, and the Kars-Akhalkalaki Railroad have made Georgia a major transit point for gas, oil and other goods. Thanks to the rehabilitation, upgrade and construction of HHPs, and the construction of transmission and interconnection infrastructure to improve the capacity and reliability of Georgia power system, Georgia has been integrated into European and Black Sea / Caspian Energy markets. Georgia has turned from an electricity importer to an electricity exporter in only five years<sup>3</sup>.
- d) Georgia became an attractive place for foreigners, with an increasing number of visitors (0,298 million in 2002, 1 million in 2007, and 2.8 million in 2011, with a growth rate of

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<sup>1</sup>. Georgia is ranked 64th on Transparency International's Corruption 2011 Perception Index.

<sup>2</sup>. In the World Bank's Doing Business 2011, Georgia is ranked 12 out of 183 economies. Doing Business investigates regulations that enhance business activity and those that constrain it.

<sup>3</sup>In 2005, Georgia imported 1.3 billion kilowatt/hours of electricity to tide the country over during rehabilitation of its Enguri hydropower plant. In 2010, however, the country exported 1.3 billion kilowatt/hours of electricity to Armenia, Azerbaijan, Russia and Turkey.

39%) thanks to the reforms, the renovated infrastructure in cities throughout the country<sup>4</sup>, and to leisure opportunities (diversified resorts with easy access to the sea and the mountains, entertainment opportunities). Most of the visitors come from Armenia, Turkey and Azerbaijan, then from Ukraine and Russia, with various purposes: trade, business, fairs, leisure and tourism<sup>5</sup>. Since 2004, the volume of facilities providing living accommodations in Georgia has grown by more than 90% and major world-renowned hotel brands operate in the country (including Marriot, Radisson, Sheraton) together with an increasing network of guesthouses.

### ***Economic weaknesses uncovered by the external shocks***

- a) However, the Georgian economy has been significantly affected by the armed conflict with Russia in August 2008 and the international financial crisis, resulting in the negative growth of 3.9% in 2009. Yet, the trend reversed in 2010 resulting in positive growth of 5.5%<sup>6</sup>. While this showed the robustness of the economic model and policies, the twin crises uncovered several weaknesses of Georgian economy. Some substantial challenges remain and need to be addressed in the short term and in adequate manner.
- b) Besides investments in infrastructure, Georgian growth has been driven by services and construction subsectors (mostly concentrated in two main cities of the country – Tbilisi and Batumi), and by the consumption of imported goods and services. Investments (including FDI and public investments) did not target in priority tradable and export sectors. The share of tradable sectors in GDP has shrined and exports have remained low. Georgian economy relies on imports to meet 65% of its energy supply (although Georgia has become a net electricity exporter) and a significant share of food needs<sup>7</sup>, resulting a substantial trade deficit. Private savings dropped from 25 to 7 from 2004 to 2010 (national savings kept positive thanks to remittances). Thus, high investment was maintained through high capital inflows making it vulnerable to external factors. The current account deficit was financed increasingly by debt-creating inflows resulting in rising external debt.

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<sup>4</sup>. Major restorations have been undertaken in Tbilisi, Batumi, Sighagi, Mtskheta, Mestia and Anaklia, to name but a few.

<sup>5</sup>. According to the National Tourism Agency, 39,4% coming leisure purposes, 26% for visiting friends and relatives, and 8,4% coming for business.

<sup>6</sup>. According to IMF, Georgia's economy has since shown signs of rebound, experiencing an estimated 6.4 % GDP growth in 2010 and project to continue to grow at an annual rate of 4,75% through 2016. The Economist Intelligence Unit estimates that growth will slow to 3.5% in 2012 as the deterioration in the global economic outlook, which began in the second half of 2011, weighs on Georgian economic activity. The economic outlook will improve in 2013, supported by the recovery in global conditions.

<sup>7</sup>. 70% according to USAID.

- c) Agriculture is symptomatic of the current economic challenges faced by Georgia. The sector contributes to only 10% of GDP (2010) whereas over 55% of the labor force is concentrated in on-farm employment and agriculture contributed 2/5 of GDP in the early 1990s<sup>8</sup>. The sector is in a bad shape. After the collapse of Soviet Union and several years of instability, most of the infrastructure was not maintained in the rural areas, like roads and irrigation systems, making access to the land and a proper irrigation difficult. Land and agrarian reforms contributed to the fragmentation of the production systems, resulting in an important number of small farmers with little capital, facing considerable risks when competing in open (Georgian member of WTO since ...) and changing markets.
- d) Access to the market might be the biggest problem, since the historical markets have been lost after the demise of Soviet Union and then by the Russian embargo on Georgian agricultural goods. Georgian farmers have to face the extremely competitive global agricultural economy that has been significantly transformed during the 1990s and the 2000s, when Georgian agriculture was collapsing. Industrial processes operate on a just-in-time basis and rely on logistic chains where supplies must be secured and traceable, and where the technical characteristic of raw and processed food products must be appropriately defined and calibrated and comply with a raft of standards covering health rules, as well as industrial standards for mass production and supply chains.
- e) Today, opportunities for market access depend on the scale of production, on the availability of logistics and on the access to information (price, legislation, etc). A company with a firm foothold in international markets can more easily invest in processing and commercialization, as well as in direct production, whereas Georgian local producers, outside of the value chains, are not endowed with such means, and it seems that the lack of knowledge (not only a lack of capacity but also a lack of studies are significantly missing all over the country<sup>9</sup>). Huge investments are needed but the business remain risky, resulting extremely high interest rate and reluctance to finance agribusiness impedes business development (16-42% range, agribusiness credits amount to 2% of the total portfolio), and a proper insurance system hardly exists in Georgia.

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<sup>8</sup>. According to EPI, the agrarian sector is operating approximately 30% of its pre-1990 production capacity.

<sup>9</sup>. For instance, on sheep, no studies available, whereas it looks like an important strategic economic opportunity for the country.

- f) Besides agricultural sector, rural areas are kept behind and Georgia faces problem in taking profit from its natural resources. The forestry sector and the wood industry remained not developed, even though more than 40% of the country is covered by forest. Endowed with significant anchovy quotas in the Black Sea, Georgian fishery is another example of natural capital not properly/sufficiently used to drive Georgian economic growth. The Georgian marine fishing industry experienced a strong decline after the break-up of the Soviet Union, and is only slowly recovering. Nevertheless, despite high demand for anchovy on the world market, Georgian fisheries sell their quotas to Turkish companies and most fish are consequently not processed on Georgian territory.
- g) Transportation and the electricity sectors have been of course a driver of economic growth, but several limits occur. In the energy sector, despite important investment flows in the electricity sectors, the FDI are less than expected and the resulting electricity capacity produced doesn't feed Georgian growth but instead Turkish growth: a significant share of the additional energy produced is exported. Freight transit has been also an important driver for growth, but most of the increase has been done thanks to road freight transit, resulting an increase in oil imports, fast deterioration of the infrastructure and congestion or safety issues, whereas Georgian Railways has an important dry freight deficit, that could be transported using locally and indigenous sources of electricity.
- h) Growth has mostly been concentrated on several but few poles, like Tbilisi and Batumi, resulting in an uneven development path of Georgian territory, illustrated by tourism development. Existing tourism development has been concentrated around two cities (Tbilisi 47% and Batumi 39%) leaving other regions and destinations behind in terms of investments. One of the main development challenges for Georgia in the tourism sector is the promotion of regions as tourism destination points. Despite important investments in the infrastructure, those territories are not easily accessible: Georgia has no organized transportation facilities in the country (no bus companies with international standards). The territories remain unutilized and tourism activities provide little source of income generation for the local habitants<sup>10</sup>.

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<sup>10</sup>The areas have been mainly targeted by programs of NGOs (Elkana, IUCN) and Funds or grants (World Bank, GTZ, BP, Eurasia Partnership Foundation, Nacres, UNDP) promoting socio-economic development of buffer zones, encouraging the protection of biodiversity and the improvement of living standards, for instance through the development of renewable sources of energy (solar panels, small HPP, biomass PP, wind mills). So far, the most efficient protected area for tourism development has been Tusheti.

### ***Georgia, towards a sustained growth***

- a) Right after the two external shocks, the Government of Georgia has recognized that a new vision is needed of the economic development. Development objectives have been formulated, articulated in policy documents such as *United Georgia without Poverty* resolution and the Strategic "10-point plan" of the Government of Georgia for "Modernization and Employment: 2011-2015": macroeconomic growth, territorial integrity and enhancing quality of life for Georgian citizens through job creation and social services. Establishing Georgia as a regional energy and transportation hub has remained a priority as liberalization, enabling favourable environment for attracting private investment. Moreover, the GoG has prioritized endogenous growth drivers relying on natural resources, energy, agriculture, manufacturing and tourism.
- b) In the energy sector, the GoG's vision is to meet 100% of the country's electricity demand by locally-produced hydropower by 2020 (GEDF, 2011; GoG, 2011) and to reduce dependence on fossil fuels.<sup>11</sup> The GoG has signed 42 agreements to develop hydropower projects and seeks to attract \$5 billion investments. An ultimate goal of replacing thermal power generation units with cheaper and cleaner power units, meeting domestic electricity demands / needs from local generation sources and increasing power exports to its neighboring countries (zero emission). It will happen offsetting thermal generation with hydroelectricity, minimizing emissions associated with the sector, or developing other alternative sources of energy<sup>12</sup>.
- c) The development of tradable and export sectors and the creation of employment is a high priority. Besides exports of electricity, the GoG plans to maximize the use of domestic hydropower, promoting the development of energy-intensive manufacturing hubs (Poti, Senaki, Kutaisi, Gardabanin, and Akhaltsikhe). The GoG is strongly prioritizing agricultural development as a means of economic growth by expanding production and subsequently stimulating the creation of more on-farm jobs. Tourism sector is recognized as one of the main economic engines of the country, with a 8% share of GDP and with high growth potential. GoG expects to have more than 5 million visitors by 2015.
- d) Productivity growth will be challenging: high productivity growth will be difficult to achieve, since easy gains have been already met. Therefore, sustained growths require

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<sup>11</sup>. According to GSE (2011), the GoG plans to expand hydropower capacity from 2510 MW in 2010 to 3910 MW by 2016 for both internal use and external markets.

<sup>12</sup>. Biomass offers a huge potential, thanks to the forestry sector (43% of the Georgian territory is covered by forest) and geothermal resources offers interesting potential. Geothermal resources available in 44 deposits across the entire country are generated by 206 wells and four springs, ranging in temperature from 30 to 110 degrees Celsius.

Georgia to increase domestic savings and high investments (at least 20-25% of GDP for 5-6% growth per year).

- e) Since 2008, the GoG has done several actions in order to ease FDI. Several "Free Industrial Zones" have been created. Administration reforms have been led by the GoG in order to ease the access to natural resources (water, forest, fisheries, mines, etc). In 2010, the department of licences has been moved to the Ministry of Energy, becoming the Ministry of Energy and Natural Resources. Land resources have been also targeted: substantial efforts have been done by the State to attract investors and to accelerate the privatization of agricultural land. The protected areas are also considered as potential revenue generators. In 2012, the Agency of Protected Areas has elaborated a ten year investment plan for Georgian Protected Areas able to generate incomes through concessions in buffer zones.
- f) Besides institutional mechanism, the GoG has undertaken major infrastructural projects throughout the country to provide upgraded transportation infrastructure (roads, airports, ...). Large investment has been done to promote the tourism sector in order to attract investors in the sector, and the building of new hotels or rehabilitation of existing facilities (sanatorium, spas, etc.). The restoration of buildings, infrastructure of many cities with touristic development potential like Tbilisi, Batumi, Sighnagi, Mtskheta, Mestia and Anaklia, have been undertaken. Moreover, it created Free Touristic Zones like Anaklia and Kobuleti on the Black Sea Coast, where the government invested in public infrastructure and civil works. Recently, in order to develop ski tourism in remote regions of Svaneti and Kazbegi, the GoG has invested in the creation of infrastructure in Mestia and Gudauri, followed by private investments.
- g) However, the economy faces a more difficult investment climate both domestically and internationally and the economic downturn of 2008-09 eroded the tax base and led to a decline in the budget surplus and an increase in public borrowing needs. Therefore, the GoG created the Partnership Fund, a private equity fund established 100% state owned created in June 2011, aimed to provide insurance and investment products<sup>13</sup>, attracting private sector investments<sup>14</sup> on four main sectors: Energy, Agriculture, Manufacturing and Real Estate.

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<sup>13</sup>. Insurance is mostly applied in energy sector through guaranteeing the off take agreement liabilities. Investment products are: equity, subordinated loan (convertible or non-convertible), senior loan (convertible or non-convertible).

<sup>14</sup>. the priority, import substitution, improved food security, provision of quality technical assistance to farmers, realization of linkages between farmers and other value chain actors, infrastructure development. ---

- h) Several mechanisms are also designed with donors. SEAF for capital investment. Tourism development:

## **GREEN ECONOMY, AN ANSWER TO GEORGIAN DEVELOPMENT CHALLENGES?**

### ***Green economy and Georgian Development Challenges***

1. The Government of Georgia is currently investigating the opportunity of implementing a “Green Growth Strategy” as a next step on the path of sustainable economic development, addressing the key structural economic challenges (job creation, trade deficit and unequal level of development among the regions of Georgia). The strategy has been labelled “Green Georgia”.
2. Georgia is endowed with rich natural and renewable resources and several critical indicators make Georgia a green country. As one of the world’s top five countries in per-capita water resources, **Georgian can drive its growth with clean and renewable sources of energy**.<sup>15</sup> The GoG’s vision to meet 100% of the country’s electricity demand by locally-produced hydropower by 2020, means decreasing the CO<sub>2</sub> emissions for electricity consumption in the next 10 years. With emissions per capita lower than 2.5 ton/person per year, Georgia will be a laboratory for Low Emission Development paths<sup>16</sup>. The objective to expand hydropower could not only curb Georgia’s emissions but also potentially contribute to lower regional emissions, since the power systems of Turkey and Armenia, two potential expanding energy markets are based primarily on fossil fuels<sup>17</sup>.
3. As explained above, Georgia is currently looking for energy intensive industries that could be implanted in Georgia, in order to encourage local consumption of electricity, besides electricity exports. Considering that a number of companies due to their **carbon footprint reduction** obligations and targets are trying to base their process on clean energy sources, clean electricity can become a major factor of attraction for choosing Georgia as a production location. This can be equally true for multinational companies as well as local enterprises that are part of international supply chain of foreign companies.

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complementary to the strategic "10 point plan" of the GoG for Modernization and Employment (2011-2015)" (increasing cultivated land by 50%; satisfying 50% of local demand for wheat with local production; exporting maize, increasing wine production by 50%, doubling exports). Agriculture: processing plants and expanding production.

15. As one of the world’s top five countries in per-capita water resources, Georgia has a high electrical-generating capacity with a greenfield site hydropower plant potential of 20TWh that remains undeveloped.

16. Emissions per capita lower than 2.5 ton / person per year and current emissions of GHG that have dropped by 75% since 1990.

17. 80% of Turkey’s electricity is generated from coal, oil and natural gas sources, while Armenia’s electricity supply is comprised of 20% natural gas, with an additional 44% attributable to nuclear power (USAID, 2012), quoting IEA (2008).

**Transport sector is certainly one of the sectors with greening opportunities**, in order to reduce fossil fuel imports in favor of introducing large scale use of domestic clean energy sources. The company Georgian Railways is the main electricity consumer of the country and can expand its electricity consumption, as soon as international freight transit will be shifted from the road to the rail. Recently, Georgian Railways has significantly increased its transport capacity, unused so far for dry freight, whereas the share of transit traffic of the total road freight transport is substantial and growing. The railway could significantly capture part of international transit, with substantial impact on trade balance and CO2 emissions<sup>18</sup>, and other crucial economic, social and environmental aspects<sup>19</sup>.

4. Georgia owns interesting assets for the development of a **Green Tourism industry**. With rich natural resources and historical heritage and special agricultural traditions (e.g. wine-making), tourism is certainly an area where ‘green business’ can have high potential. Georgia provides good opportunities for adventure tourism, water sports and mountain sports, and all other types of low-impact tours based on appreciating the natural environment such as bird-watching, nature trekking and river rafting, in untouched and wild regions. Georgia is a biodiversity hotspot and offers opportunities for eco-tourism, including ecologically adapted exploration of protected areas, which make up 7% of the nation’s total territory and an established network of 50 protected areas on the basis of international standards<sup>20</sup>. Thanks to its cultural heritage (12000 monuments and ruminants from 3000 years of cultural history) and its cuisine, gastronomic tourism, as well as spa and health tourism thanks to an important amount of well-known water springs like Tskhaltubo.
5. Other business opportunities can be found in **greening the existing tourism facilities**, reducing their environmental footprint while also improving the profitability of installations. Several green technologies have been developed recently in order to optimize the use of resources and minimize their consumptions, allowing important savings and decreasing productions costs. This logic can of course be introduced to any activities or businesses, like in the manufacturing industry and agriculture, where green or energy efficient technologies can be easily introduced. Several studies have underlined the

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18. Transport accounted for 10% of CO2 emissions of the country in 2002 and is expected to be the largest GHG emitter by 2025, under a BAU scenario. Transport services account for more than 50 % of Georgia’s commercial services exports, and the sector is a key contributor for tourism development.

19. Estimated externalities generated from road freight transport, particularly transit traffic, are enormous and include rapid deterioration of road infrastructure, air pollution, congestion, traffic accidents, and casualties.

20. Including 14 strict nature reserves, 8 national parks, 14 natural monuments, 14 managed nature reserves, and 2 protected landscapes.



rich geothermic potential of Georgia, that could for instance be use as a source of heat for agriculture production under greenhouses, providing production opportunities during off-season period, when imports only supply the domestic market, contributing to the reduction of the trade deficit challenge.

6. **Green and sustainable agriculture practices** can also encourage access to markets and exports, thanks to the compliance with **private voluntary labels / standards** flourishing all over the planet with a declared intention of encouraging farmers to minimize their negative impacts from an environmental and social point of view<sup>21</sup>. Producers are awarded with the corresponding label if standards are met, which can be used on their products to promote sales or marketing opportunities. Those labels can go together with Supplier Network Programs, an alternative development strategy to the cooperative models promoted during the 1990s and the 2000s that has serious limitations in the case of highly fragmented agricultural sector like Georgia<sup>22</sup>. The strategy is to link agro-industries that are already well-established in the market, with small supplier businesses, thus generating a sales volume to benefit both low income producers and agro-industries. Well established for example in Latin America, Supplier Network Programs are examples of the “productive chain”, where the industries, in charge of processing and commercialization, provide also technical assistance, inputs, logistics and access to information to small and medium-sized supplier businesses. Thanks to contract, farmers are able to supply requirements of the agro-industrial sector. Similar mechanisms are implemented by several but too few companies in Georgia, like Ferrero for hazelnut production. Several business opportunities have been also demonstrated in the agri-industry with green components (HIPP, Kula). Several private voluntary labels / standards could bring interesting business opportunities in Georgia, in particular targeting emerging markets like in the Muslim countries, where the Halil market is increasing significantly, for instance enlarging sheep export.

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21. Private standards correspond to a variety of objectives and/or secondary aims in the field of sustainable development (organic agriculture, fair trade, food safety issues, responsible production, ethics, etc.), these standards refer however to similar institutional and procedural schemes. Based on specifications of environmental and/or social “best practices”, such standards are often – but not always<sup>1</sup> – associated with specific labels or statements on products, which enable consumers to identify them. Producers adopt these specifications voluntarily (hence they are known as voluntary standards) and “third party certification” procedures are employed to monitor compliance – where an auditor ensures that farm practices conform to specifications.

22. Small farmers have little capital, it can be difficult for them to form organizations, and they face considerable risks when competing in open and changing markets.

7. Green and sustainable private voluntary labels can also bring opportunities for other product manufacturing (**green product manufacturing**). Markets are increasingly segmented and highly specialized on a product-by-product basis. They are endlessly diversifying within the ‘quality economy’ through labeling systems and protected designations of origin. There are/must be several niche markets that could be supplied by Georgian producers, in tune with current industrial trends (standardization and innovation), like eco-friendly winter sportswear or Rose oil, perhaps the most widely essential oil perfumery, with a well-known history in Georgia.
8. **The promotion of short industrial and commercialization chains** can also bring answers to the Georgian economic challenges of import substitutions and of increasing the value added of production chains. In the agricultural sector, short chains remain an emerging trend, materializing mainly through the establishment of agricultural fairs and ecological or organic markets. Principles of local sourcing can be implemented by distributions companies, identically through Supplier Network Programs, especially for fresh products, like fruits, vegetables, meat or fish. The on-going investments of Carrefour in several Hypermarkets in Georgia can provide important opportunity, as soon as Carrefour follows another supplying strategy than existing retailers of Georgian market.
9. As it is the case for electricity produced by HHP in Georgia, where the green growth strategy would target local consumption instead of exports with low value added, several other Georgian natural resources can supply short industrial chains. The anchovy could for instance supply a fish feed factory to supply food of fish-farms. Moreover, several by-products of existing industries can be valued as inputs for other production, like by-products of the wine industry for the production of grape seed oil, or the use of wood residues of the Georgian timber industry as a source of biomass supplying biomass power plants.

***The Ministry of Economy and Sustainable Development: Towards a “green growth strategy”***

1. In July 2010, the Ministry of Economic Development has been transformed into the Ministry of Economy and Sustainable Development, in order to formulate (/ implement?) the green growth strategy. Its main focus is enabling private sector to use the opportunities that are available and translate them into profitable business activities that are based on sustainable practices and/or produce outputs that directly feed into sustainable development. The Ministry targets to facilitate access to finance via leveraging ‘soft’

landing and grant-making mechanisms as well as access to technology and knowhow with the assistance of private sector oriented IFIs and donor community.

2. Created in October 2010, the Sustainable Development Department (1) leads and facilitates efforts to develop and implement policies and programmes in the field of sustainable development; (2) raises private sector awareness of green business opportunities, and (3) cooperates with international organisations and establish a network of partners among public agencies, business associations, government ministries, NGOs, and other entities.
3. The role of the ministry is of facilitator and process leader rather than a regulator or donor. The Green Growth Strategy should be implemented within the current economic policy framework, so as to reap synergies from other programs, measures and policies of the government rather than suggest means disruptive to those, being immediate results-oriented and based on a multi stakeholder engagement process. The strategy should capitalize on the strengths of this framework<sup>23</sup> as well as come up with the mechanisms to address the challenges herein.
4. MESD is the focal point of the GoG on the World Bank's project "A policy framework for green transportation in Georgia" in order to consider options for reducing fossil fuel imports in favour of introducing large scale use of domestic energy sources for public and private transportation, thereby improving the balance of trade and energy security, and providing opportunities to utilize national hydropower potential more efficiently for economic growth. Several subsectors of transport are currently studied, as freight transport and intercity collective transport.
5. MESD collaborates with the French Development Agency (AFD) on intercity passengers transportation issues in order to increase its reliability and accessibility, reduce spatial disparities across the country, reduce GHG emission of non-efficient buses as well as to accommodate the rapid growth of economy, in particular the tourism sector. AFD and the Ministry are currently preparing a study to assess the current state of intercity bus services and facility, to design a strategic intercity mobility model and a whole business plan of intercity bus services.
6. In cooperation with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH a web portal was launched ([www.greengeorgia.ge](http://www.greengeorgia.ge)). This Web Portal will provide

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23. The strategy should be a private sector oriented policy, and should be consistent with non-protectionist international trade policies. It is important to stress that developing a green economy does not require excessive interventions from the government in the market.

continuously updated information about the country's achievements and potential on the path of sustainable economic development. The portal was launched in framework of the project "Build Up investment promotion services in Green Sector", and will serve as the Government of Georgia's main platform for information exchange and international positioning in the sector.

7. In Kakheti (Sighnagi, Kvareli, Telavi, Tusheti, Sagarejo), the World Bank, in collaboration with the MESD, proposed a Regional Development Program including infrastructure development, rehabilitation of cultural heritage sites and the development of a Free Touristic Zone in the buffer zone of adjacent protected area. The same philosophy of sustainable tourism is leading the project lead by GIZ, targeting Ateni valley in Shida-Kartli. The MESD is the focal point of GoG on the project.
8. With the support of the UNDP, the Ministry of Economy and Sustainable Development has initiated a project that will result in identifying which green business opportunities exist in Georgia.

## **GREEN BUSINESS OPPORTUNITIES**

### ***Identifying Green Business Opportunities***

1. The Ministry of Economy and Sustainable Development set a high priority on providing industry data and analysis reliable and actionable for the private sector, identifying specific opportunities and providing related investment and return estimates. It targets the creation of a strong awareness among businesses and financing organizations regarding the commercially attractive benefits that can be reaped from engaging in sustainable business areas.
2. It is assumed that the low degree of development of 'green business' in Georgia is caused by at least three main factors: (1) Low awareness on commercial opportunities in 'green economy'; (2) A clear gap in terms of lack of information (market data and analysis) regarding the commercial value and potential financial gains of 'green sectors' or sustainable business practices; (3) A deficit of know-how and corresponding technology related to sustainable business practices and industries. Those factors translate into unwillingness of commercial lending institutions to allocate finance to a still less-explored area of business activity. The concept of sustainable development being relatively new to Georgia is not viewed as a commercially attractive option for private sector actors.

### ***Methodology***

To identify the Green Growth Opportunities, a four-phased approach was implemented.

- Phase 1: Data gathering. There is evidence of an abundance of data on green business opportunities in Georgia. A lot of sector studies are available, the majority prepared by donor agencies. There is, however, no central point of access to these studies and the studies do not come in a standard format. Phase one of the “Green Business Opportunity” identification is a simple effort of data gathering. All reports and information related to the four Green Business Opportunity Areas have been collected and stored in a database.
- Phase 2: A first high level selection of opportunities to be studied in detail. Analytical work will be needed to filter out of the collected data, conclusions pertaining to the identification of opportunities worthwhile pursuing. An analytical framework and tools were developed to assess, at a high level, which opportunities to retain for closer investigation. This instrument comprises a series of question on critical factors and have been made available in an Excel-sheet. Critical factors at this stage of the analysis were: indications of market feasibility, the potential green characteristics, the timing needed to get full information on the opportunity.
- Phase 3: Detailed analysis of the shortlisted opportunities. The instrument made available for the purpose of the in-depth analysis is the Green Business Opportunity Questionnaire (GBOQ) . Besides the analysis of publicly available information, interviews with critical stakeholders were organised in order to get a more profound and substantiated understanding of the potential of the Green Business Opportunities. The questions focus on the identification of key stakeholders, an assessment of regional and locational potential and an estimation of the potential benefits for Georgia, in terms of job creation and FDI-potential. Also to be assessed are technical, market and financial feasibility of each opportunity. Possible legal or administrative issues related to developing the opportunity were identified.
- Phase 4: On the basis of the information supplied through the Green Business Opportunity Questionnaire a scoring system has been defined that will lead to a final ranking of the opportunities followed by recommendations for the next phase of the Green Georgia Initiative.

### ***Putting the Methodology in Practice***

During the implementation of the Green Business Opportunity Areas, several problems have surfaced that have had an impact on the quality of the data collected and thus also on the final results.

1. Timing constraints: since there was an abundance of information available it was difficult to process it all in the time allocated to the experts. As a result, we may have missed other interesting opportunities;
2. At the analytical stage access to stakeholders for interviews was needed. There have been cases where people were either not available or not very eager to participate;
3. Data quality issues: sometimes the information supplied in the reports, studies and other documents consulted was dated. In fast moving business environment like Georgia it is critical to have access to the most up-to-date information;
4. The Green Business Opportunity Questionnaire contains several information fields for which no data were found. Most of the opportunities studied are indeed “opportunities” not projects. They point us towards interesting market opportunities but have not been clearly defined in terms of variables as employment creation or investment needs.

### ***An Note on the role of Stakeholders***

The Ministry of Economy and Sustainable Development is a key stakeholder in the Green Georgia Initiative. Besides having taken the lead here, its role is to create synergies between the other stakeholders. To be noted is the part to be played by the Georgia National Investment Agency (GNIA) a crucial bridge between the Georgian private sector and potential investors from abroad.

Donor Agencies and NGOs have played a crucial role in the process of Greening Georgia by financing sector and other studies which have been the starting point of the Green Business Opportunity selection process.

The local banks so far have not picked-up their role in the Greening of Georgia, despite the availability of credit lines – through International Financial Institutions – exactly for this purpose. Some encouraging will be necessary in order to bring the cost of capital to more acceptable levels and allow financing on the long term.

The Green Georgia initiative should pave the way to the creation of an investment fund to promote investing in the Green Economy.

## **Green Business Opportunities - Agriculture and Food**

### ***Selection Process and Rationale***

In the agriculture and food sector, opportunities were identified in the following sectors and activities: vegetables (onion, potato, eggplant, garlic, tomato), sheep breeding, cattle and milk production, fish farming (organic brown trout, sturgeon), fruits (apple, cherry, kiwi, fruit trees & seeds, blueberry), organic tea, herbs (fresh and medicinal), rose and laurel oil, greenhouses.

In order to make a selection of which opportunities to study in detail, the following criteria were applied:

- The potential impact on the Georgian agribusiness and economy due to the scope and size of the project;
- The potential for export and import substitution;
- The long term sustainability following the natural conditions or competitive advantages for Georgia;
- The extent to which an opportunity has been already been studied. Certain sectors like wine and nuts have already benefited from sufficient attention and have not been selected for further analysis.

This has resulted in a shortlist of 3 opportunities:

1. Green Agribusiness Sheep Farming;
2. Greenhouse Vegetables and Herbs Production;
3. Inland Fish Farming and Fish Feed Production.

### ***1.1. GREEN AGRIBUSINESS SHEEP FARMING***

#### ***The Project:***

The breeding of sheep to export live animals and processed sheep meat to countries in the Caucasus, the Middle East and the Arab world.

#### ***Green Characteristics:***

The sheep will be grass-fed so there is no need to feed sheep artificially. This avoids import and transportation of feed and reduces production cost. There may exist a potential to turn this opportunity into an organic-bio industry.

This opportunity is an answer to the Green Georgia challenge through seeking compliance by means of private voluntary labels and standards.

### Key Stakeholders in Georgia:

The breeding sector consists mainly of small farming units with herds of maximum 500 sheep but there is no slaughtering capacity in Georgia. There is limited interest from local banks in the agricultural sector, the main issue sheep farming faces is the requirement for collateral. The sector is represented by the Sheep Breeders Association of Georgia but it does not seem to be very active. Its main purpose is to support the farmers in seeking export partners. The Agrarian University of Georgia, Livestock Department has been identified as a key stakeholder.

### Regional Potential:

The opportunity could be developed in regions like Tusheti, Dedoplistskaro, Alvani and Marneuli as they offer the best natural conditions for sheep farming (grazing).

### Market Potential & Feasibility

Georgia has a tradition in sheep breeding. In Soviet times the size of the herd was around 2 to 3 million. The sector has experienced a huge decline over the last 20 years but recently, it started growing again. Local sales are small compared to the number of sheep exported to neighboring countries. According to official statistics, in 2011 the export of sheep is valued at USD 14.9 million. Main countries of destination are Azerbaijan, Armenia, Jordan, Lebanon, Libya and Syria. Other much smaller export markets are: Israel, Qatar and Iraq.

### Current Stumbling Blocks

There is a ceiling on the number of sheep that can be grass-fed estimated to be around 1,5 million heads. Access to finance is a considerable problem as interest rates are high and farmers have problems meeting banks' collateral requirements. There is no properly functioning veterinary service nor is there a suitable slaughterhouse. There are certification issues in certain export markets (Halal, Kosher) and seasonality in export markets may create logistical issues.

### Competitive Advantages of Georgia

Due to a natural feeding Georgia benefits of a cost advantage. Apparently, the cost of breeding sheep in the exporting countries is at least twice as high compared to Georgia. The potential that may exist in the middle-long term to certify the products as organic or bio. The proximity of the country to export markets.

### Recommendations:

An opportunity to be pursued as there is a potential for profits on the longer term. It could also become an export product of strategic importance to Georgia. There is, however, a need for a



## ***1.2. GREENHOUSE VEGETABLE AND HERBS PRODUCTIONS***

### ***The Project***

The establishment of greenhouses in Georgian using hot springs and geothermal wells as a source of energy.

### ***Green Characteristics:***

The production of vegetables and herbs in a sustainable and environmentally friendly way, considerably reducing production cost. By moving away from the use of traditional heating sources environmentally damaging emissions can be avoided.

This opportunity is an answer to the Green Georgia challenge through the creation and promotion of shorter industrial & commercialization channels..

### ***Key Stakeholders in Georgia.***

Some companies have taken small scale initiatives in this field. There is an Association of Greenhouse Producers but it is currently not very active. Limited evidence of involvement from the financial sector so far and the same goes for the International Financial Institutions. Some funding has gone through the sector via the ADA-project from Millennium Challenge Corporation. Through Economic Prosperity Initiative (EPI) USAID has conducted some research in this field. The Government plays a crucial role as it is responsible for granting licenses for the use of geo-thermal water.

### ***Regional Potential:***

The regions rich in geo-thermal sources are: Senaki, Zugdidi and Khobi in the west of Georgia, Marneuli Gardabani, Bolnisi, and Lisi in the east of Georgia. All these regions offer favorable conditions for growing vegetables and herbs in greenhouses.

### ***Market Potential & Feasibility:***

Currently Georgia imports around 50% of its vegetables consumption with a substantial seasonal difference between summer and winter. There is no hard data on how big the greenhouse sector is right now, but it is assumed to be small. Georgia mainly imports from Turkey where the industry is far more developed resulting in far higher yields and economies of scale. Turkey also benefits from more favorable climatic conditions. Promoting the development of greenhouses in Georgia would reduce the need for import, reduce the need to transport vegetables over long distances and partially level out seasonality.

### ***Current Stumbling Blocks:***

Access to finance is an issue as interest rates charged by local banks are excessively high (16-42%). There is also a need for capacity building in all aspects of agribusiness management in

order to increase yields and efficiency rates. The sector also lacks knowledge in terms of geothermal water use efficiency and management. Awareness as to the need to use cheaper and more sustainable sources of energy is increasing in the sector.

*Competitive Advantages of Georgia:*

The availability of hot springs and geothermal wells located in many areas of the country and the fact that unit labor cost are lower in comparison to Turkey.

*Recommendations:*

An opportunity to be pursued. Despite the many challenges this industry faces there is a market for home-grown vegetables and natural conditions are favorable. Projects in this field are expected to have reasonable pay-back periods if all the conditions are in place. However, further study is needed to prepare bankable business plans inclusive of a benchmark cost comparison with competition countries.

### ***I.3. INLAND FISH FARM WITH A FISH FEED FACTORY***

*The Project:*

To develop the a more sustainable alternative to wild capture of fish which faces a sharp decline in Georgia. Worldwide, aquaculture is sector characterized by rapid growth. The main objectives are to substitute for imports and to export organically or bio-bred fish. Georgia has an unused potential in inland fish farming. It has better natural conditions as opposed to Armenia, where sturgeon industry has developed at a greater pace. Armenia not only delivers sturgeon to Georgia and some other countries, but exports caviar as well. Besides investing in fish farming, the project includes the creation of a new fish feed producing factory next to the fish farm.

*Green Characteristics:*

For this project no damage is done to the environment and no harmful products will be used. It is also a project with a focus on organic or bio-production. Fish feed production has definitely green features as well as the feed will not contain any chemical components and could use fish waste as inputs.

With this opportunity the industrial chain in the fishing sector becomes shorter and will increase the creation of value added by using more local resources (end recapturing some of the Black Sea fishing quota)

*Key Stakeholders:*

The sector is composed mainly of very small enterprises, very often family businesses supplying locally. There is some processing activity in Georgia as well, and there is also a

fish feed factory. The share of fish farming in local banks' agribusiness portfolio is negligible. The Georgian Fish Farmers Association organizes trainings for professionals. There has been some involvement in the sector by a private investment fund (SEAF) which has made an investment in anchovy fishing. The FAO has commissioned several studies in the sector. The same has been done through USAID's Economic Prosperity Initiative but the fish sector was not considered to be a priority.

#### Regional Potential:

Fish farming requires availability of clean water. So regions with access to underground Artesian waters or with a lot of lakes and rivers qualify. Also beneficial is a having a location the Black Sea to facilitate access to raw materials. On this basis, the following regions would offer locational advantages for aquaculture: Achara-Kedi region (close to the Black Sea), Shida Kartli-Gori region (artesian water), and Mtskheta-Mtianeti-Dushti (clean rivers). Other suitable regions are Samegrelo, Samtske-Javakheti, and Natakhtari.

#### Market Potential & Feasibility:

It is estimated that total sales in the Georgian fish market amounts to US\$ 50 million. Of this, US\$ 34.6 is import. The value of Georgia's fish exports, mainly to Turkey, stands at US\$ 3.2 million. An interesting but seasonal market is created by developing the Georgian tourism sector.

#### Current Stumbling Blocks:

There is a real lack of knowledge in the industry, this is especially critical as aquaculture is knowledge-intensive. Access to financing is a major blocking factor due to high interest rates and lack of collateral. There is an urgent need for a more effective sector-specific policies (relating to, amongst others, certification and veterinary controls). Payback periods are generally longer for fish farming projects.

#### Competitive Advantages of Georgia:

Georgia offers unique natural conditions to develop aquaculture:

- Substantial inland water resources with clean water;
- A lot of variety in the climate permitting the farming several breeds;
- The existence of rare underground Artesian and geothermal water;
- Access to the Black Sea as a source for fish feed.

#### Recommendations:

This opportunity should be pursued further, it is a profitable opportunity but a long-term perspective is needed. Especially profitable seems to be fish feed factory project. Trout has

definitely advantages and already has a tradition in Georgia. Sturgeon and caviar are interesting as well, but this requires a long term commitment from the operators and investors. More detailed feasibility studies will be required.

## **Green Business Opportunities - Green Products Manufacturing**

### ***Selection Process and Rationale***

The first stage of the selection process has been data gathering data and analysis of reports, studies, overviews, presentations; international and bilateral agreements, national laws, decrees, and other regulations; and industry insights. This has resulted in mapping ten general areas of possible opportunities to study.

A thorough analysis of potential of “greening Georgian manufacturing industries” provided for two approaches to the issue (to be used simultaneously): (a) Green Manufacturing of Any Product and (b) Manufacturing of Green Products. The first approach is based on the Green Processes of manufacturing while the second approach elaborates on Green Materials and Output.

In order to get insight, general feasibility of ‘greening’ the pre-selected manufacturing areas and to evaluate stakeholder expectations and capacities, interviews were conducted. The stakeholder research clarified which areas hold the most promising manufacturing opportunities for ‘going green.’ At this point the focus was shifted on specific companies/start-ups from general areas and industries. Some of the initiatives included in the long-list were excluded due to the following reasons:

- It would take too long to make an initiative work;
- There were insufficient resources within the company to contribute to the Green Opportunity;
- An opportunity has been evaluated as ‘partly green’ only and/or possibly simultaneously making non-green or unsustainable impact;
- No significant effect on/contribution to increasing employment or supporting macro-economic development was expected.

The following criteria to define the final short-list of green manufacturing opportunities/projects:

- Expected feasibility;
- Potential impact on the macro-economic growth;

- Capacity to export and/or substitute imports;
- Minimal to zero negative impact on the environment;
- Economic and Social Sustainability;
- Prospective capacity to employ local staff and management;
- Utilizing national competitive advantages of Georgia's socio-economic status quo.

As a result we have come up with the following short-list (specific projects/companies):

- Manufacturing of Heating Briquettes made of Wood Waste;
- Greening the Pharmaceutical Industry;
- Greening the Construction Industry;
- Development of New Winter Sportswear Brands and Products.

### ***II.1.MANUFACTURING OF HEATING BRIQUETTES MADE OF WOOD WASTE***

#### *The Project:*

The manufacturing of heating briquettes for consumer and corporate markets, both locally and for export, using wood-processing waste streams.

#### *Green Characteristics:*

The opportunity will lead to decreasing volumes of waste disposed to the environment and decreasing volumes of non-renewable resources used for heating purposes.

Contributes to the objectives and goals of the Green Georgia Initiative by moving towards the use of clean and renewable energy.

#### *Key Stakeholders in Georgia:*

The following organizations are key stakeholders in this opportunity: the Georgian Wood Company, Wood Service and other wood-processing companies. Potential stakeholders are the Georgian Banks (TBC Bank, Bank of Georgia, ProCredit Bank and others) and the International Financial Institutions (IFC, EBRD) at the implementation (financing) stage. From the Government side the key stakeholders are the Ministry of Economy and Sustainable Development, the Ministry of Environment Protection of Georgia and the Ministry of Energy and Natural Resources of Georgia.

#### *Regional Potential:*

The opportunity can be developed in the Kakheti and Imereti Regions due to better access to raw materials and the presence of the wood processing industry.

#### *Market Potential & Feasibility*

This opportunity could be a quick win as over 80% of machinery and industrial capacities is in place and sufficient raw materials to produce the briquettes is available. What remains is not expensive and can easily be imported from the European Union.

#### Current Stumbling Blocks

Companies do not possess sufficient market insights, marketing skills or business plans to pursue the opportunity. The general public awareness of the opportunity is also low.

#### Competitive Advantages of Georgia

An abundance of raw materials available, enough industrial capacity and capability to produce the briquettes, ample technological skills and market proximity.

#### Recommendations:

It seems to be a potentially promising initiative but a thorough feasibility study is required. Additional research focusing on the Georgian wood-processing industry is required.

## **II.2. GREENING THE PHARMACEUTICAL INDUSTRY**

### The Project:

Making pharmaceutical manufacturing companies greener through using environment-friendly materials, energy-efficient technologies, and enhancing green manufacturing processes and practices.

### Green Characteristics:

This initiative describes four fields of opportunities to help Georgian pharmaceutical industry become greener:

- Making pharmaceutical products manufacturing processes, both human- and machine-driven operations, greener;
- Increasing the share of greener drugs (made of clean, environmentally- and consumer-friendly raw materials, ingredients, and additives) in the overall national output of drugs;
- Establishing and developing a Georgian chamber of the American Chemistry Society's "Green Chemistry Institute" (GCI);
- Acquire additional state-of-the-art technology, knowledge and skills for the industry restructuring and consulting.

Contributes to reaching the goals of the Green Georgia Initiative through the manufacturing of green products and the reduction of Georgia's carbon foot-print.

### Key Stakeholders in Georgia:

The key stakeholder for this opportunity is GMP (a PSP subsidiary). Other pharmaceutical manufacturing companies could also benefit, possibly at a later stage. Potential stakeholders are the Georgian Banks (TBC Bank, Bank of Georgia, ProCredit Bank and others) and the International Financial Institutions (IFC, EBRD) at the implementation (financing) stage. The Tbilisi State Medical University is a stakeholder and from the Government side the key stakeholders are the Ministry of Economy and Sustainable Development and the Ministry of Health Protection of Georgia.

For transfer of knowledge to Georgia the following NGO's could become stakeholders: The Green Chemistry Institute (USA), The Royal Society of Chemistry (UK), The Centre for Green Chemistry at Monash University (Australia), The Interuniversity Consortium "La Chimica per l'Ambiente" (Chemistry for the Environment, INCA), The International Union of Pure and Applied Chemistry (IUPAC – worldwide), Green & Sustainable Chemistry Network (Japan) and the Canadian Green Chemistry Network.

#### Regional Potential:

In stage one of the project, the focus is on the GMP factory location: Qvemo Ponichala, a suburb of Tbilisi.

#### Market Potential & Feasibility

According to various estimates Green Chemistry comprises somewhat from 1 to 3 per cent of the Georgian pharmaceuticals manufacturing sector. However, export of the green chemicals, especially to developing countries, could boost this subsector. Some states in Africa and Arabian peninsula have easier-to-penetrate drugs import regulations. A significant share of the required raw materials like natural medicine ingredients are available in Georgia.

#### Current Stumbling Blocks

The market potential (especially for exports to Africa and Arab Countries) has not been evaluated.

Also, the expertise and know-how in this domain is not available in Georgia.

#### Competitive Advantages of Georgia

Companies manufacturing both "standard pharmaceutical products" (bulk chemicals, produced in massive quantities by standardized reactions) and "fine chemicals" (custom-produced in smaller quantities for special uses) face serious challenges when it comes to going green: it can be unclear where a chemical or a process lies on the green spectrum. A good barometer for chemists and chemical engineers is the "E factor," a measure of the total amount in kilograms of solvents, reagents, and consumables used per kilogram of product

made. Some of Georgian pharmaceutical manufacturing companies (like GMP) hold such a competitive advantage (capacity to become efficient in making green medicine).

*Recommendations:*

It would be a good idea to conduct brief research of the pharmaceutical industry in Georgia and export destination markets. It is suggested in the next stage to approach NGOs listed in the stakeholder section currently involved in programs in green chemistry at the national or international level. These NGOs are a good source for know-how transfer and the establishment of long-term, fruitful partnership. Each potential export destination markets should be thoroughly studied.

### ***II.3. GREENING THE CONSTRUCTION INDUSTRY***

*The Project:*

Making construction companies greener through recycling construction materials, using environment-friendly and energy-efficient materials, and enhancing green manufacturing processes and practices.

*Green Characteristics:*

The opportunity has the following green characteristics: living and working environments will become cleaner and more energy-efficient, the volumes of construction waste disposed to the environment will reduce and the quantity of non-renewable resources used in construction will shrink.

Contributes to reaching the goals of the Green Georgia Initiative through the manufacturing of green products and the reduction of Georgia's carbon foot-print.

*Key Stakeholders in Georgia:*

The key stakeholders are first and foremost the construction industry: companies like Axis, Arsi, and Wood Service and other construction and real estate development companies.

Key Government stakeholders are the Ministry of Economy and Sustainable Development, the Ministry of Environment Protection of Georgia, the Ministry of Energy and Natural Resources of Georgia, and the Tbilisi City Hall.

EBRD is a major stakeholders in the energy-efficiency building construction and maintenance field in Georgia as it issues credit lines for local commercial banks in order to strengthen financial instruments aimed at projects that save energy and make manufacturing processes greener. Most of the Georgian commercial banks have access to these credit lines, which are intended to provide cheaper loans to companies willing to reduce their energy consumption



and/or renovate their producing capacities in a more sustainable and environment-friendly way.

#### Regional Potential:

In general, the green construction industry concept could work anywhere in the country. It is, however, recommended to first focus on companies like Wood Service and Axis. Given their current management capabilities and expertise, they are more open to the idea to go green so the chances to succeed are higher.

#### Market Potential & Feasibility

Demand on the market for green construction is small but has been rising for the recent few years. At this stage there is no hard market research data providing evidence for the feasibility of this opportunity. However, USAID's EPI program has resulted in a study on the potential of using basalt and other "greener" raw materials in the construction industry.

Most of the Georgian construction sector could benefit from the initiative. However, it is estimated that only some 30 to 40 % have the capacity and capability to take part in a greening processes.

#### Current Stumbling Blocks

Both individual and corporate customers either do not have sufficient understanding of or desire to acquire or rent "green spaces." In general, customers have the perception that green construction would cost them significantly more. Currently, companies do not possess sufficient market insights, marketing skills or specific business plans to pursue the opportunity. The most important constraint is lack of skills and experience in modern business and production management. Also, the purely technical skills are missing as well.

#### Competitive Advantages of Georgia

There is an abundance of decommissioned plants and building in Georgia, which can be demolished and recycled. Additionally, there is access to resources like basalt which contribute towards greener construction.

#### Recommendations:

It seems to be a potentially promising initiative, however a more thorough feasibility study is required. It would be a good idea to conduct more research of the construction industry in Georgia.

## **II.4. DEVELOPMENT OF NEW WINTER SPORTSWEAR BRANDS AND PRODUCTS**

### The Project:

This opportunity focuses on the Georgian garments manufacturing companies by creating new brands and make green Georgian winter sportswear products.

#### Green Characteristics:

To produce the sportswear green raw materials, like felt made of natural wool, will be used.

This opportunity concerns the manufacturing of green products as such helping to accomplish the goals of the Green Georgia Initiative. It also leads to shorter industrial and commercialization chains as import is replaced by local products.

#### Key Stakeholders in Georgia:

The stakeholders are primarily the local textile industry: Elselema, Miller & Company, Laura Gachava, Georgian Tekstil Sewing Factory, Georgian Felt Ltd, Mtiebi Company. It may be possible to attract foreign direct investments or engage in partnership with foreign manufacturers in this sector.

#### Regional Potential:

A sportswear factory could be located in Tbilisi or Batumi. These cities currently have an industrial basis in the textile sector. Tbilisi has the advantage of being closer to both Gudauri and Bakuriani ski resorts, which are to be the prime points of sale for the locally-produced winter sportswear.

#### Market Potential & Feasibility

Most of the sportswear products sold in Georgia is imported. The market is dominated by imported, lower quality products and the buyers are mostly locals. It is assumed that foreign tourists visiting Georgian destinations, including ski resorts, would be interested in purchasing locally-made garments. Raw materials as well as manufacturing processes of the proposed Georgian winter sportswear must be totally eco-friendly and comply with EU regulations. It can be a significant advantage to develop clothing according to the bluesign® standard.

#### Current Stumbling Blocks

The tourists and business visitors' segments of the winter sportswear market have never been evaluated and tackled. This is a new approach to garment industry in Georgia.

At the early stages of the project, raw materials will have to be imported but on the longer term, it will be possible to source some of the raw materials locally. The largest constraint is to acquire the necessary management skills required to assure compliance with the international standards and to properly manage the production process. There is also need for capacity building in the area of marketing.

#### Competitive Advantages of Georgia

Georgia has developed a reputation as an adventurous, remote, and active sports-friendly country. Branded winter sportswear would add to the visitors value and make their experience more memorable.

Recommendations:

It seems to be potentially promising initiative but an in-depth feasibility study is required.

## **Green Business Opportunities - Clean Energy Based Industries**

### **Selection Process and Rationale**

The first stage in the process was to come to a clear definition of “clean energy based industries” as a general concept and which aspects of the concept can realistically be applied in Georgia. Next step was focused on collection of data, reports, studies for three main sub-sectors: clean energy production and related activities, industries in recycling (including energy efficiency field) and clean transportation opportunities.

There is an abundance of information on developing the clean energy sector in Georgia, especially on the country’s hydro and renewable energy potential. This project focus mostly on direct energy production for rural development and were not really business oriented. Hardly any were found on clean energy based industry (as these are not really developed yet). There is also limited data available on the recycling industry. There are hardly any reliable and recent statistical data on volume and composition of waste in Georgia. The recycling sector is clearly underdeveloped, run on a small scale and has not attracted much attention from donors and investors. Energy efficiency business models are also not really developed probably because of a lack of good projects and because of very low level of awareness. Overall, it can be stated that volumes of waste are too small to create economies of scale and facilitate the facilitate growing profitable businesses in the recycling sector.

Transportation offers various attractive business opportunities as Georgia is a major hub for the transportation of goods between Europe, Turkey and Central Asia. Many feasibility studies have been done in the frame of TRACECA and provide very good data. Business opportunities can be found in transportation projects with green aspects.

After a series of interviews with industry stakeholders two opportunities emerged as having the greatest potential:

- Generating Biogas from Household Waste,
- Establishing a Sea Highway Bypassing the Touristic Zones of Adjara.

### **III.1. GENERATING BIOGAS FROM HOUSEHOLD WASTE**

#### *The Project:*

The opportunity focuses on using solid household waste from landfills as a source for the production of biogas through the process of methanization. Biogas is a mixture of gases (typically 45% CO<sub>2</sub> and 54% CH<sub>4</sub>) which, after collection and compression, can be piped to city consumers (option 1) or used for heating greenhouses (option 2).

#### *Green Characteristics:*

The organic content of solid waste releases large quantities of methane and carbon dioxide into the atmosphere resulting in significant greenhouse gas emissions. Converting household waste into cheap energy through gasification processes is a way to reduce greenhouse gas emissions, save energy, reduce the volume of waste in landfills and reduce pollution risks.

#### *Key Stakeholders in Georgia:*

Gasification of household wastes is already implemented in the new Tbilisi landfill by TbilService Group. TbilService Group is a municipal company and can be used as a model to replicate this opportunity elsewhere in Georgia. The EBRD has been involved in waste management by co-financing the construction of a landfill in Rustavi in 2009. The project was initiated by BP and the Rustavi landfill is the first in Georgia to be built and operated in accordance with EU directives. SIDA has also participated in financing landfill investments. CENN, an NGO, has taken some initiatives in relation to collection and recycling of paper, but has concentrated most of its efforts on an awareness campaign around recycling. KfW, REC-Caucasus, UNDP and GIZ have also had some involvement in the recycling industry. The Tbilisi City Hall is directly involved in waste management issues, Ministry of Environment of Georgia is issuing licenses and controlling environmental impacts.

#### *Regional Potential:*

At 55% Tbilisi takes up the largest share in solid municipal waste volume in Georgia. Therefore, the focus should go to Tbilisi first and Rustavi second. Then duplication can follow in urban areas in Georgia.

#### *Market Potential & Feasibility*

The Tbilisi population produces a daily average of 0.7 kg of domestic waste per person. According to TbilService Group around 1000 tons of solid municipal waste is collected every day in Tbilisi. According to other estimates, around 350,000 tons of waste are produced in the city per year.

For biogas, waste needs to be sorted at the landfill sites because glass, paper, metals and plastics are not suitable for biogas production. However, there are no clear and reliable data on the composition of waste. At the end of 2011, EPI has launched a waste assessment study but collection of data turn out to be more difficult to do that expected. To be noted is that Turkish investors have announced interest to waste management and biogas production in Georgia.

### Current Stumbling Blocks

Biogas production requires the sorting of household waste. This has not yet a common practice at landfills in Georgia. TbilService Group is planning a large investment in a sorting facility (separation of glass, paper, plastics and metals from waste needed for biogas production). The gasification process requires considerable technical and technological skills, not yet available in Georgia. Biogas production is no longer possible at old landfills where most of the gases have been burned.

To develop this opportunity urgent legal reform is needed. There is no real law on waste management, there are no general strategies, policies or plans of action in waste management and the existing legal framework is inadequate.

Parallel to other countries that have chosen to develop biogas, guarantees are needed that producers can feed the electricity generated into the national grid at attractive rates.

### Recommendations:

Biogas production from solid household waste is first a foremost a green business opportunity. It is attractive from an environmental standpoint but will only develop on a large and commercial scale when a solid legal framework is in place, especially the need for a pre-agreed feed-in tariff is a crucial factor. More research will be needed to develop this opportunity in a bankable business venture. A serious lobbying effort will be necessary to put the right legal framework in place. A detailed feasibility study and a business plan are needed, to start with the Tbilisi case.

## **III.2. ESTABLISHING A SEA HIGHWAY BYPASSING TOURISTIC ZONES OF ADJARA**

### The Project

The project focuses on the establishment of a sea highway line from the Black Sea Turkish Port of Kopa or Samsun to Poti with regular short sea shipping services. This can be done

with a roll-on roll-off (RO/RO) vessel, a RO/RO-container carrier, a feeder container ship or a RO/RO-passenger ferry.

*Green Characteristics:*

The project is green because it will partially realize a modal shift from road to sea transport thus reducing the consumption of diesel (and CO<sub>2</sub> emissions), reducing the number of trucks passing through touristic areas of Adjara and reducing congestion at the Sarpi customs checkpoint. Contributes in facing the challenge of greening the transportation industry.

*Key Stakeholders in Georgia.*

Key company stakeholders are Poti and the Turkish ports, shipping companies and agents, freight forwarders and transportation companies. Also critical is the role of the Georgian Railways. Business associations with a role to play are road transport associations (GIRCA, Turkish Trucks Associations, others neighboring countries TIR associations, etc.), the Association of Freight Forwarders of Georgia (AFG) and others FIATA members and Business Associations representing users (BAG-Business Association of Georgia) should be also involved. The European Union is involved through the project "Motorways of the Sea for the Black Sea and the Caspian Sea". The World Bank is also involved in through its "Green Transportation Program". The ADB is planning investments in Poti port. There are plenty of government actors involved in this project: the Georgian Ministries of Economic Development and Regional Development of Georgia. The Turkish Ministry of transport, the Customs and Borders Authorities, the Maritime Administrations. The Government of Adjara is also involved as the project has great economic impact on this region.

*Regional Potential:*

The project mainly concentrates on the Adjara Region and on Poti.

*Market Potential & Feasibility:*

Market studies have been conducted in the framework of TRACECA with a pilot project for the Ilyichevsk-Samsun-Poti ferry line. The TRACECA "Motorways of the Sea" also has given clear indications of the market potential of this opportunity. To make the project attractive regular calls at all ports will be required, as well as a fixed-day schedule. Also crucial will be a broad pro-active communication and marketing efforts aimed at the trade target. There is large direct trade flow between Turkey and Georgia amounting to around 1 million tons per year. Transit trade potential from Turkey to Azerbaijan is also nearly 1 million tons per year and 1.75 million tons per year go to Kazakhstan. Flows from Europe

(non CIS and TRACECA countries) to the Caucasus countries and Kazakhstan are reaching 5 million tons per year.

*Current Stumbling Blocks:*

Additional investments will be needed in the Port of Poti as there is currently only one ramp to for loading and unloading purposes. None of the ferry services today work on a fixed schedule. Capacity on the vessels is restricted to 1,000 TEUs until the new container terminal is opened in 2014. Generally the storage and intermodal facilities are located off-docks which adds additional handling.

Trade and transit procedures and formalities are major barriers that might hamper the development of the project in general and more particularly for flows to/from Azerbaijan and Central Asia. Maritime transport and port transits require more formalities than land transport. As with any project related to bring about a modal shift, there will be resistance from the market.

*Competitive Advantages of Georgia:*

The Northern Route through Russia is expensive with administrative complexities at the border crossings. The South Route through Turkey and Iran is a long and risky route (war, embargos and political issues). The central route through Poti port links Turkey, Ukraine and EU to Georgia, Armenia, Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan and Afghanistan and offers comparative advantages in term of pricing and reliability.

*Recommendations:*

This project is a good opportunity for Georgia: it is expected to be profitable, it increases the attractiveness of Adjara for tourists and would considerably reduce traffic nuisance there. To further develop this opportunity, additional meetings with Georgian Railway will be needed. There is also a need for a more consistent financial study.

## **Green Business Opportunities – Sustainable Tourism**

### ***Selection Process and Rationale***

Georgia has accumulated substantial experience with sustainable tourism starting with the implementation of several bio-diversity supporting programs financed by the UNDP in 1996. All over Georgia, various programs have been pursued supporting green tourism development as a sustainability component to the continuous protection of the environment. The Georgian National Investment Agency has been promoting green tourism opportunities through business forums, tourism exhibitions and through their website. This has resulted in a substantial number of studies being available to be analysed as part of this selection process.

Four green tourism projects were selected out of an original list of over 10 opportunities. The selection criteria applied are the following criteria:

- The use of natural resources for tourism development without damaging the environment;
- The potential for development of energy efficient infrastructure thus providing affordable and competitive services to tourists;
- The promotion of specialized green tourism services such as wild nature watching, botanical tours, ecologically clean food supply in combination with adventure and cultural tourism;
- The Government's priorities set for developing the tourism sector;
- The social impact of the opportunities and their potential to create jobs.

The projects studied in detail at this stage are the following:

- The project in Mestia to develop a biomass plant is good example of using of wood industry waste for supplying energy to a remote village facing shortages in electricity supply;
- The project in Tskaltubo focuses on the rehabilitation of a spa resort where here is the potential to develop a high-standard spa & wellness centre using the availability of water at minus 35° Celsius.
- The Sea Water Air Conditioning Project at Black Sea Shore was selected because it could potentially reduce local energy consumption reduction by 1000 % resulting in a substantial reduction of CO2-emissions.



#### ***IV.1. MESTIA ECO-TOWN***

##### ***The Project:***

The establishment of a biomass plant to supply alternative energy to the tourism sector in Mestia.

##### ***Green Characteristics:***

The biomass plant will contribute to boosting environmental sustainability of the tourism industry in Mestia by supplying energy using local supply of wood waste. The biomass plant will supply heating and hot water to hotels and other buildings as well as to greenhouses, which will supply local hotels and resorts with agricultural products which otherwise have to be shipped in from elsewhere.

Will impact on the reduction of Georgia's eco-footprint will at the same time will boost the greening of the tourism industry.

##### ***Key Stakeholders in Georgia:***

The key stakeholders are the developers and their architects: iC GMBH and Eco Sign. Some local banks have extended credit lines to developments in Mestia and the EBRD has financed the power sector, including supporting actions to address issues of climate change, energy security and diversification of supply. The Georgian Ski Federation has participated in implementation of the Mestia ski resort project. The Georgian National Investment Agency is actively seeking foreign investors for the Mestia-project. The Ministry of Energy and Natural Resources has played a role in the preparation of a feasibility study for the biomass project.

##### ***Regional Potential:***

The town of Mestia is located in the Samegrelo-Zemo Svaneti region, some 128 km northeast of the regional capital of Zugdidi. Mestia Town is part of Mestia District with comprises 132 villages, covers an area of 3,044 km<sup>2</sup> and with a population not exceeding 15,000.

##### ***Market Potential & Feasibility***

The consumption of energy produced by the biomass plant will be needed to deal with the growth of the local tourism industry forecasted at 35% for the next 3 to 5 years. A master plan for the Mestia Ski Resort has been prepared by GNIA with assistance of Ecosign Mountain Resource Planner LTD in 2010 providing data to support the market feasibility of the project.

##### ***Current Stumbling Blocks***

Limited investment in infrastructure in the past, especially related to road infrastructure and accommodation have so far restrained the development of the tourism sector in Mestia. It is

important to assure that the pipeline connecting the biomass plant to Mestia is constructed before renovation of roads in the center of Mestia.

Another potential bottleneck is to assure that a sufficient supply of fuel in the form of biomass is available to feed the biomass plant. The main source will be wood from the mountain forests nearby and the key challenge will be to find a balance between using wood for biomass and the conservation of the forest.

#### Competitive Advantages of Georgia

The speed at which infrastructure is developed to support the tourism sector in Mestia (airports, access roads, electricity, sewerage and water). The liberal business environment in Georgia (taxation policy, the ease of starting a business, simplified licensing procedures, ...).

## ***IV.2. COLD SEA WATER AIR CONDITIONING IN THE BLACK SEA***

### The Project:

The project envisages the establishment of heating and cooling infrastructure with heat exchangers based on the permanent year-round supply of cool water from Black Sea Coast of Georgia. It is based on a tried and tested technology implemented in locations like, for example, Toronto. There is a high potential to use this technology to feed the air-conditioning systems of the hotels and resorts spread all along the shore of the Black Sea.

### Green Characteristics:

The main advantage of this technology is that in summertime energy consumption for air conditioning will reduce more than tenfold. During the winter the technology has its benefits as well, reducing power consumption with an estimated factor of 3.5. The local tourism industry will thus rely less on fossil fuels for energy reducing air pollution and emission of greenhouse gases.

This project is an answer to the challenge of greening the tourism industry and will have a positive impact on Georgia's carbon footprint.

### Key Stakeholders in Georgia:

Several local hotels are the key stakeholders in this project: the Kempinski Hotel is one of them. Some funds have been committed to conduct technical and financial feasibility studies. Meetings have been planned with the EBRD, local banks and the IFC to mobilize investment for the project. A major role has been played by an NGO called Co-evolutionary Solutions and NGO focusing on dealing with the economic and technical challenges of environmental projects. The Government of Adjara and the Batumi Municipality are also key stakeholders.

### Regional Potential:

All major towns on or near the The Black Sea Coast of Georgia can benefit from this technology, particularly Batumi, Kobuleti, Poti, Lazika and Sokhumi. The system can operate effectively up to the 15 km inland from the Black Sea coast. This effectively covers an area where around 80% of population of Adjara resides.

### Market Potential & Feasibility

Energy consumption for air conditioning takes up almost 45% of total energy consumption at hotels, universities and storages facilities in the area. Facilities located as far as 15 km from the Black Sea coast can benefit from this technology. The payback period is estimated at 2.2 years.

### Current Stumbling Blocks

There is substantial lack of awareness locally that such a technology is available. Lack of local engineering skills will require contracting with international engineering firms.

### Competitive Advantages of Georgia

The conditions in Georgia are ideal for implementing this technology. Georgia can benefit from the first mover advantage and once the system is up and running and it's financial feasibility proven, Georgia can export it to other Black Sea countries.

### Recommendations:

The project is technically, financially viable. The technology exists and has proved to work in locations in other parts of the world. It's market feasibility is clear and the added value to various sectors of economy obvious. It is definitely a green project. Additional studies need to be done to support the market forecast.

## **IV.3. TSKALTUBO RESORT – GREEN TOURISM**

### The Project:

The project concerns the reconstruction of the sanatoriums and spa centers at Tskaltubo, followed by development of individual investment packages for each sanatorium and Spa center and common marketing plan for whole resort. Tskaltubo has a long history of attracting tourists going back to the 8<sup>th</sup> century and was booming as a destination in Soviet times.

### Green Characteristics:

This opportunity will boost the Green Tourism sector in Georgia thus contributing to meeting the challenges of the Green Georgia Initiative.

### Key Stakeholders in Georgia:

The key stakeholders in the project are Ltd. "Balneoservisi" which owns 9 spas of which only one is operational, Ltd. "Modern Via" a tourism agency specialized in the attraction of medical tourists from Europe and South Caucasus. The Georgian National Investment Agency plays a crucial role in promoting Tskaltubo as spa destination. The Ministry of Regional Development manages infrastructural rehabilitation works.

### Regional Potential:

Tskaltubo is located in Western Georgia at the foot of the Greater Caucasus Mountain Range. The sanatoria and spas will have the capacity to host up to 10,000 visitors per day once the rehabilitation is completed.

### Market Potential & Feasibility

There is plenty of potential competition in this market as there are approximately 300 licensed resorts in Georgia. Besides Tskaltubo other spas are operational in Akhtala, Nunisi and Borjomi. Additional spots for thermal and mud treatment: Abastumani, Ateni, Kumisi. Other resorts in this sector are: Bakhmaro, Bakuriani, Surami, Tsemi, Tsagveri, Beshumi, Shovi, Utsera, Nabeglavi Zvare, Lechkhumi, Kojori, Manglisi, Kiketi, Sairme.

### Current Stumbling Blocks

Currently the Infrastructure is very poor and will require substantial investment. There are only two hotels in use and of the nine spas only one is operational. None of the 16 sanatoria are currently used for tourism purposes as today they house Internally Displaced People.

### Competitive Advantages of Georgia

Tskaltubo has access to a vast supply of water, up to 25 million liters per day. It is the warmest thermal spa location in Eurasia and its water's mineral contents is unique (comparable only to certain spa resorts in the Czech Republic and Germany). Tskaltubo is strategically located nearby Kutaisi where the local airport of Kopitnari is being renovated. Tskaltubo can also easily be reached by road from neighboring countries. The liberal business environment in Georgia (taxation, ease of starting a business, simplified licensing procedures) should encourage attracting investors.

### Recommendations:

Is an opportunity to be pursued as it could offer a unique selling proposition to the spa & wellness tourist at attractive rates in a pristine environment. On overall development plan will be needed not only focusing on the rehabilitation of the spas and sanatoria but also paying attention to restaurants, shops, galleries, local products and transport infrastructure in order to offer a complete package to the visitor. Obviously, all this needs to be done adopting

environmentally sustainable principles, including responsible use of water, energy efficiency and waste management.

#### ***IV.4. GREEN HOSTEL CHAIN – GREEN TOURISM***

##### *The Project:*

The construction of a Green Hostel Chain in the buffer zones near the Protected Areas of Kakheti, particularly along the four main circuits presented in World Bank's Regional Development Program for Kakheti. There is a need for more lodging capacity.

##### *Green Characteristics:*

The hostels will be constructed on the basis of the principles of green architecture, thus promoting energy efficient tourism as well sewage, waste and water management. All will be developed in close cooperation with Georgia's Protected Area Agency. Visitors will have access to green tourism services, including wild nature watching.

This opportunity will increase Georgia's offer in Green Tourism.

##### *Key Stakeholders in Georgia:*

From the private sector, the key stakeholders are Wood Service having accumulated substantial experience in designing and constructing environmentally friendly buildings. Caucasus Travel is a leading agency providing tours inside Georgia inclusive hiking in the Protected Area of Kakheti. Another travel agency with experience in this field is Georgian Discovery Tours. A Georgian entrepreneur Nikoloz Manjgaladze will also be a key stakeholder since he is willing to share his experience in operating a hotel in comparable circumstances (Lagodekhi Protected Area)

The local banks TBC Bank, Bank of Georgia and Bank Republic all have access to EBRD-funds to finance energy efficient projects. The Georgian Tourism Association currently is promotes ecotourism through donor funded programs. Elkana is an association of farmers producing bio-product and could potentially supply food to the Green Hostel chain.

All major International Financial Institutions and Donor Agencies provide funding for environmentally friendly development projects (capacity building, feasibility studies, etc.).

The key stakeholders from the Government's side are the Protected Areas Agency, the Department of Tourism, the Kakheti Regional Government and GNIA.

##### *Regional Potential:*

Kakheti is located in Eastern Georgia and experiences a growing number of tourists, particularly in Tusheti. There are plenty of opportunities for adventure tourism, cultural heritage tourism, botanical tourism, wild nature watching.

#### Market Potential & Feasibility

Green Tourism today is a small market niche as Georgia annually welcomes less than 10,000 visitors in this segment. This is the result of insufficient supply of accommodation and underdeveloped services. The Tusheti Protected Area experiences a growth in the number of tourists and reached 6,000 in 2010.

#### Current Stumbling Blocks

A major stumbling block is the lack of awareness of the local population regarding sustainable tourism development (green architecture, energy efficiency, waste management, green tourism services). Another problem is the lack of instruments to raise awareness of the opportunity with investors. There is no relevant Government policy towards promoting tourism in Protected Areas.

#### Competitive Advantages of Georgia

Georgia offers, in a European context, substantial natural resources and excellent climate and several Protected Areas and Natural Parks.

#### Recommendations:

The project is feasible if the green tourists inflow to Georgia continues to rise and if Tusheti succeeds to at least maintain the number of visitors it receives today.

## CONCLUSION – RECOMMENDATIONS

### *Introduction*

One results stands out from the study: there are plenty of business opportunities in Georgia to pursue a Green Growth Strategy. This study has resulted in a list of 13 Green Business Opportunities which were studied in detail in order to assess to what extent they can meet the goals and objectives of the Ministry of Economy and Sustainable Development set for the Green Georgia Initiative. But many more have been studied over the course of the project and many of these, even when not selected for further analysis, do have their merits and may be worth pursuing.

It is important to stress that the study has resulted in producing a shortlist of opportunities. As such, with few exceptions, no “off-the-shelve” business plans ready to be presented to investors have surfaced. At this stage it is not known what investment in fixed assets or intangibles will needed, how many jobs will be created, what the capacity building needs will be, or what the potential for Foreign Direct Investment will be.

Therefore, the next phase in the Green Georgia Initiative is to move from opportunity to project. This requires executing detailed feasibilities, drafting business plans and building business cases. It is proposed to select from the twelve analysed maximum five Green Business Opportunities for the next phases.

The selection is made on the basis of three criteria:

- The “green characteristics”;
- The “time-to-market”;
- The potential economic impact.

### *The “Green Charateristics”of the Opportunity*

A ranking is made on the basis of the extent to which the opportunity can be considered a “green” opportunity? How much of a direct impact will the opportunity have on the environment? Is the “green content” a critical factor or just a by-product of the opportunity? In the table below, we have ranked the opportunities on the basis of their “green characteristics”, with 1 equal to the highest ranking and 13 the lowest..

Agriculture & Food		
I.1	Green Agribusiness Sheep Farming	10
I.2	Greenhouse Vegetables and Herbs Production	3
I.3	Inland Fish Farming and Fish Feed Production	9
Green Product Manufacturing		
II.1	Manufacturing of Heating Briquettes made of Wood Waste	5
II.2	Greening the Pharmaceutical Industry	8
II.3	Greening the Construction Industry	7
II.4	Development of New Winter Sportswear Brands and Products	13
Clean Energy Based Industries		
III.1	Generating Biogas from Household Waste	1
III.2	Establishing a Sea Highway Bypassing the Touristic Zones of Adjara	4
Tourism		
IV.1	Mestia Eco-Town	6
IV.2	Cold Sea Water Air Conditioning in the Black Sea	2
IV.3	Tskaltubo Resort – Green Tourism	12
IV.4	Green Hostel Chain	11

### ***The Potential Economic Impact of the Opportunity***

Besides the impact on the environment, it is important to assess the opportunity on the basis of its potential its aggregated economic impact. Is the opportunity of small or large scale and what will thus be the potential impact of the opportunity in terms of employment and value added creation, attraction of foreign direct investment, import substitution or export potential? In the table below, we have ranked the opportunities on the basis of the time-to-market factor, with 1 equal to the highest ranking and 13 the lowest.

Agriculture & Food		
I.1	Green Agribusiness Sheep Farming	12
I.2	Greenhouse Vegetables and Herbs Production	5
I.3	Inland Fish Farming and Fish Feed Production	7
Green Product Manufacturing		
II.1	Manufacturing of Heating Briquettes made of Wood Waste	3
II.2	Greening the Pharmaceutical Industry	9
II.3	Greening the Construction Industry	8
II.4	Development of New Winter Sportswear Brands and Products	2
Clean Energy Based Industries		
III.1	Generating Biogas from Household Waste	4
III.2	Establishing a Sea Highway Bypassing the Touristic Zones of Adjara	13
Tourism		
IV.1	Mestia Eco-Town	6
IV.2	Cold Sea Water Air Conditioning in the Black Sea	10
IV.3	Tskaltubo Resort – Green Tourism	1
IV.4	Green Hostel Chain	11



### ***The “Time-to-Market” of the Opportunity***

How much time will it take before the project will be implemented and the impact (on the environment) felt? Is the opportunity perhaps a quick win? Can it be realized in the short term or will the effects only be felt over the middle-long to long term? In the table below, we have ranked the opportunities on the basis of the time-to-market factor, with 1 equal to the highest ranking and 13 the lowest.

Agriculture & Food		
I.1	Green Agribusiness Sheep Farming	5
I.2	Greenhouse Vegetables and Herbs Production	8
I.3	Inland Fish Farming and Fish Feed Production	9
Green Product Manufacturing		
II.1	Manufacturing of Heating Briquettes made of Wood Waste	4
II.2	Greening the Pharmaceutical Industry	11
II.3	Greening the Construction Industry	6
II.4	Development of New Winter Sportswear Brands and Products	12
Clean Energy Based Industries		
III.1	Generating Biogas from Household Waste	10
III.2	Establishing a Sea Highway Bypassing the Touristic Zones of Adjara	2
Tourism		
IV.1	Mestia Eco-Town	3
IV.2	Cold Sea Water Air Conditioning in the Black Sea	1
IV.3	Tskaltubo Resort – Green Tourism	13
IV.4	Green Hostel Chain	7

### ***Conclusions***

In order to come to a final ranking, an aggregate score will be made. This will be done first without allocating weights to the three decision criteria, meaning that we attribute the same importance to all three criteria. Based on this approach, the top 5 of opportunities are reproduced in the table below.

Decisions Model 1: Ranking without Weights	
1	II.1 Manufacturing of Heating Briquettes made of Wood Waste
2	IV.2 Cold Sea Water Air Conditioning in the Black Sea
3	III.1 Generating Biogas from Household Waste
3	IV.1 Mestia Eco-Town
5	I.2 Greenhouse Vegetables and Herbs Production

We have the possibility to allocate weights to the three decision criteria, several additional decision models can be build this way.

Decision model 2 is de result of putting the accent more on the environmental impact.

Decision Model 2		Environmental Impact: weight 50% Economic Impact: weight 30% Time-to-Market: weight 20%
1	III.1 Generating Biogas from Household Waste	
2	IV.2 Cold Sea Water Air Conditioning in the Black Sea	
2	II.1 Manufacturing of Heating Briquettes made of Wood Waste	
4	I.2 Greenhouse Vegetables and Herbs Production	
5	IV.1 Mestia Eco-Town	

For decision model 3 we are not concerned with timing, but put the stress even more on environmental impact.

Decision Model 3		Environmental Impact: weight 70% Economic Impact: weight 30% Time-to-Market: weight 0%
1	III.1 Generating Biogas from Household Waste	
2	I.2 Greenhouse Vegetables and Herbs Production	
3	II.1 Manufacturing of Heating Briquettes made of Wood Waste	
3	IV.2 Cold Sea Water Air Conditioning in the Black Sea	
5	IV.1 Mestia Eco-Town	

For decision model 4 we focus on quick wins, being opportunities with a substantial environmental impact that can be realized in the short term.

Decision Model 4		Environmental Impact: weight 30% Economic Impact: weight 10% Time-to-Market: weight 60%
1	IV.2 Cold Sea Water Air Conditioning in the Black Sea	
2	III.2 Establishing a Sea Highway Bypassing the Touristic Zones of Adjara	
3	II.1 Manufacturing of Heating Briquettes made of Wood Waste	
3	IV.1 Mestia Eco-Town	
5	I.2 Greenhouse Vegetables and Herbs Production	

### ***Recommendations***

In order to finalize the list of opportunities to take to the next phase, a consensus is needed on the rankings given to each of the twelve opportunities for the three selection criteria: the environmental impact, the economic impact and the time-to-market.

It should be understood that the current rankings are not based on hard facts. The time available for analyzing all the opportunities that have surfaced and the quality of the data gathered does not permit a more refined scoring system. By definition, the current rankings are based on the International Expert's interpretation of the data supplied in the Green Business Opportunity Questionnaires by the Local Experts.

The Ministry of Economy and Sustainable Development should translate its own priorities in relation to the impact the Green Georgia Initiative should have by attributing its own weights to the three selection factors.

As a result from the decision models proposed above, and consolidating the results, a total of 6 opportunities seem to have the hold the most promise for Green Georgia and should be considered for the next study phase. These are:

Agriculture & Food:

- I.2 Greenhouse Vegetables and Herbs Production

Green Product Manufacturing:

- II.1 Manufacturing of Heating Briquettes made of Wood Waste

Clean Energy Based Industry:

- III.1 Generating Biogas from Household Waste
- III.2 Establishing a Sea Highway Bypassing the Touristic Zones of Adjara

Tourism:

- IV.1 Mestia Eco-Town
- IV.2 Cold Sea Water Air Conditioning in the Black Sea

At this stage, the onus is on pilot project identification and documentation. The purpose of stage is to develop a limited number of specific feasibility studies/business proposals based on the opportunities identified in the first stage. These will become a backbone of specific investment projects that will also have a financing mechanism and/or grand technical assistance attached to it.

The investment projects will be offered to some of the strong business players in Georgia that work in sectors related to investment projects as well as foreign companies for the opportunity of creating JVs with local companies or individual investment. Simultaneously, the projects will be presented to the International Financial Institutions operating in Georgia.