

WASTE AND RECYCLING MANAGEMENT AS PART OF A CIRCULAR ECONOMY

EDITORIAL

Economic growth generally implies growing demand for raw materials, energy and other natural resources, while growing amounts of materials end up as waste if not properly managed. The use of raw materials from natural resources and the related production and consumption processes have environmental, economic and social consequences beyond national borders. Even though a circular economy is increasingly viewed internationally as a necessity and opportunity, integrated solutions related to the issue of waste are still not at the forefront of practice. Many developing countries and emerging economies are facing major challenges in improving waste and recycling management systems.

Waste should no longer be deposited in uncontrolled landfills, illegal rubbish tips or incinerated in the open, and it must not end up in waterways, resulting in climate-damaging greenhouse gases as it breaks

down. Plastic waste in the ocean does considerable damage to flora and fauna and finds its way into the human food chain. This newsletter highlights practice-oriented circular economy solutions related to waste and recycling management as part of our work in Albania, Serbia and the Americas. Our team of specialists from the Water, Sanitation & Waste Management Department provide comprehensive solutions based on longstanding technical experience and innovative thinking. Within the GFA Climate & Energy Cluster and its Technical Working Group on Green and Circular Economy inhouse experts leverage synergies by collaborating across all relevant business units within the GFA Group so that services for all aspects of a circular economy can be developed and provided.

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Managing Director



Raw materials are becoming scarcer, energy more expensive, and the amount of waste is rising worldwide. Less than ten per cent of the raw materials consumed are currently recycled. For a circular economy it is essential to recycle materials and recover energy from waste. Municipalities provide the separation and collection of used materials, and increase recycling capacities for the secondary use of materials in order to reduce the final disposal or incineration of waste. Such measures will be more effective if integrated in a circular economy. This transformation requires a change in knowledge, attitudes and practices among stakeholders. Companies design and offer products that are intended for a long lifespan, can be repaired and recycled, and are built with a high degree of secondary raw materials. Citizens change their consumption and product utilization practices towards more sustainable alternatives. Governments develop and implement laws and regulations as well as market-based instruments to foster sustainable product development and production, sustainable consumption and product utilization as well as recycling and waste management.

CLIMATE-FRIENDLY SOLID WASTE AND RECYCLING MANAGEMENT IN ALBANIA

Dumping waste in open, unregulated disposal sites is a common sight in Albania. Most of the reasons for this phenomenon lie in challenges of transporting waste to regional waste management centers. Therefore, the *Modernized, Climate-friendly Solid Waste and Recycling Management* program of GIZ has been supporting initiatives to strengthen the waste management in several municipalities in Albania since 2020. The project cooperates with the Ministry of Tourism and Environment (MoTE), in par-

ticular with the Directorate for Environment Policies and Waste Management Sector, and the National Environment Agency (NEA). Regionally, the project focuses on two regional NEA and SEI offices, where some of the partner municipalities are located. At the local level, the project works closely with the municipalities of Himara, Belsh, Peqin, Roskovec, Cerrik and Saranda. Its overall objective is to establish foundations for climate-sensitive implementation of the national strategy for integrated solid waste management through



Participants holding their certificates of participation in the introduction to waste disposal site operation and management workshop in Peqin



Demonstration in the field on the composting process and the equipment needed

advisory services to MoTE, environmental compliance related to solid waste management (SWM), modernized SWM at the local level, and operational standards of existing landfill sites.

GFA Consulting Group has been implementing the program's Output 3 that aims at applying climate-sensitive integrated SWM policies in selected partner municipalities, and Output 4 with the objective of improving operational and environmental standards of existing landfill sites with temporary operation permits.

OPERATING AND MAINTAINING THE WINDROW COMPOST FACILITY IN CERRIK

Between October 2020 and April 2021, GIZ assistance helped transform the former unpermitted and unlined municipal waste disposal site in Cerrik into a green waste composting facility. As part of this assistance, equipment to operate the windrow composting process has been provided to the municipality. Following the construction of the composting facility and the supply of main items of equipment required to operate it, the GFA team organized a one-day technical assistance workshop for the municipality staff responsible for the site. This capacity development effort aimed at providing an introductory orientation related to all equipment and steps of the windrow composting process from green waste production to final compost product.

Relevant municipality staff was familiarized with the infrastructure and equipment provided so that the personnel has become confident in operating the facility. The workshop was attended by 26 participants from Cerrik Municipality and

one representative from each of partnering municipalities of Roskovec and Belsh. In addition, teachers and students from the local agricultural vocational school took part in the training.

INTRODUCTION TO WASTE DISPOSAL SITE OPERATION AND MANAGEMENT WORKSHOP IN PEQIN

Peqin is one of the partner municipalities, where a GFA long-term advisor is providing consulting services. Waste is currently covering the entire area of a gully designated for waste disposal. Operating machinery onsite that is supposed to consolidate the waste but is not working regularly. This is a common issue in interim waste disposal sites throughout Albania. In order to address this problem, the project's Output 4 is currently developing a related operating manual. A workshop on the introduction to waste disposal site operation and management in Peqin aimed at testing and contributing to the content development of the manual.

The event was attended by municipal officials assigned to city planning and the municipality wheeled loader operator from Peqin, officials responsible for waste disposal site operations and oversight in the municipalities of Skrapar, Prrenjas and Girokastra, and a representative of the Ministry of Interior responsible for municipal services. The objective of the workshop was to provide an introduction and demonstration related to improved waste disposal site operation and management for project partner municipalities that are involved in transitioning dumpsites to interim landfills. Relevant staff learned how to physically organize and operate site infrastructure and

equipment and how to continuously manage daily waste loads to minimize adverse impacts from waste disposal. They had the opportunity to observe typical equipment in operation and develop further appreciation of the practicalities of waste disposal site operation and maintenance. Municipal staff developed enhanced confidence in taking their disposal sites into operation and in sustaining the improvements made once the remediation works have been delivered.

DEVELOPMENT OF WASTE MANAGEMENT PLANS FOR CERRIK AND SARANDA

Under Output 3 of the mentioned program, GFA has advised selected partner municipalities to apply climate-sensitive integrated waste management procedures. One of the activities related to the introduction of modernized methods for the management of municipal waste in partner municipalities is the development of waste management plans. The purpose of such plans is to optimize service costs, and, at the same time, to introduce more modern and environmentally friendly services. The plans are drafted according to an easily monitorable methodology that defines the needs for a genuine service enterprise so that the latter can implement plan requirements as accurately as possible.

The technical team set up by the municipality has been assisted by experts from a consortium of GFA Group, RWA Group and Eco-DES Studio that helped drafting and consulting plans for the municipalities of Cerrik and Saranda. Both plans have been officially approved.

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Creation of working face for appropriate operational layering and compacting waste

SUPPORTING A CIRCULAR ECONOMY IN SERBIA

Between 2019 and 2021, GFA has implemented the Climate-sensitive Waste Management project in Serbia on behalf of GIZ. The project focused on three related key pillars of a circular economy (CE): policy framework, integrated waste management and a circular private sector.

GFA together with the Chamber of Commerce and Industry of Serbia (CCIS) has developed value chain guidelines to provide guidance to the sector and a framework for various sector stakeholders to increase the use of secondary raw materials. Specifically, the GFA team developed CE-oriented Value Chain Guidelines for Plastic Packaging Utilization, and for Hotel/Restaurant/ Catering Food Waste Utilization.

In addition to these national guidelines, national GFA experts have also worked at the regional and local level. Working with 16 local governments in the Novi Sad, Lapovo and Krusevac regions, they supported the improvement of municipal waste management systems by developing CE-oriented Local Solid Waste Management Plans (SWMP) in accordance with new regional SWMPs. In order to move away from the current linear economy, the new SWMPs address CE issues such as waste separation at source through a two-bin system. For example, organic waste is collected for a composting facility financed by GIZ, and municipal recycling yards are introduced as a climate mitigation practice. The plans address the gender-sensitive inclusion of formal and informal waste collectors, and the sustainability of financial planning. At the municipal level, the GFA team assisted capacity building in waste management, e.g. collection route optimization of ten municipalities or recommendations for practical improvements of separated waste collection. As circularity cannot be achieved only by introducing separate collection and recycling, the project also addressed the demand side for secondary raw materials. Hence, GFA supported 20 SMEs in the regions in preparing circular economy action plans. In particular, the action plans outlined steps toward the utilization of secondary raw materials, process optimization, energy efficiency, and treatment of process-related waste. Moreover, the team assisted three SMEs in developing their action plans further into CE Business Models that specifically addressed the issue of waste reduction, waste separation and recycling, and the utilization of secondary raw material.

In order to increase awareness for CE practices in the sector, GFA organized onsite and virtual trainings and workshops in close coordination with GIZ. The goal was to bring together stakeholders from the private and public sectors such as the Chamber of Commerce and Industry of Serbia, the project municipalities and SMEs. This was to establish an understanding that circularity can only be achieved as a joint effort and with actors working together and creating linkages to close the CE loop as foreseen in the CE-oriented Value Chain Guidelines.

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REDUCING PLASTIC WASTE IN THE AMERICAS

Since 2021, GFA in a consortium with NIRAS and the [CLEAN Cluster from Denmark](#) assists Brazil and Columbia in the transition towards a circular plastics economy. The EU-funded project Reducing Plastic Waste in the Americas – Ensuring Sustainable Consumption and Production Patterns supports the countries in the exchange of know-how and technical solutions regarding a circular economy, and comprises policy dialogue, technical cooperation, and outreach components. The project aims at strengthening the cooperation of the EU with Brazil and Colombia by means of a set of activities that will support a transition towards a more circular economy in line with the EU Plastic Strategy. This initiative will support a transition towards the sustainable consumption and production of plastic, particularly concerning waste prevention and management aspects such as plastic waste entering the marine environment or favouring green public procurement.

Innovation is the cornerstone and starting point of the project. It will apply a methodology, developed and used by Danish partner CLEAN to structure the innovation process. In a first step, the project will map and engage public and private local stakeholders to identify and develop an actionable understanding of circular plastics challenges within the city and sectors targeted. Based on these challenges and the innovation gaps identified GFA will search



for companies and other European solution providers interested in transferring knowledge. The project can activate European clusters leveraging the [International Cleantech Network](#), a partnership including eleven European clean tech clusters. The European actors will then participate in co-creation workshops to explore the city and sector challenges and develop solutions. These workshops will also provide a neutral venue for informal technology showcases and match-making between participants. Open innovation events and hackathons for selecting and choosing highly innovative solutions, and for knowledge sharing and collaboration between companies and startups from Brazil, Colombia and Europe will be organized. The project will also support the piloting of selected solutions, especially with regards to new business models and models of reverse logistic that are likely to be tested. The implementation phase starts in autumn 2021 so that initial innovative circular plastics solutions for Brazil and Colombia can soon be shared.

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GREEN TVET SCHOOL

E-Learning course on the German dual TVET system with a focus on renewable energies and energy efficiency

TVET Hamburg



- ▶ How to promote private sector engagement in TVET delivery to increase the relevance of skills?
- ▶ How to improve didactical approaches in TVET towards green skills development?
- ▶ How to improve TVET quality assurance and certification mechanisms towards achieving the SDGs?
- ▶ How to make better use and reap the benefits of digital solutions towards greening TVET?

FIRST ROUND OF THE GREEN TVET SCHOOL SUCCESSFULLY COMPLETED ONLINE

TVET Hamburg has completed its first round of the Green TVET School – a unique e-learning program on the German dual TVET system with a focus on green energy skills. The six-week program was held from 1 February to 12 March 2021 for TVET professionals and policy-makers from around the globe. Participants from Azerbaijan, Brazil, Burkina Faso, Germany, Ghana, Indonesia, Nigeria, Pakistan, Senegal, and Zambia learned, brainstormed and shared best practices in different country contexts.

The program was designed and implemented by TVET Hamburg – a GFA-led consortium with the Hamburg Institute of Vocational Education and Training (HIBB) and the Hamburg Chamber of Commerce – in partnership with the Renewables Academy AG (RENAC). The objective of the program was to create a comprehensive online learning experience about essential features of the German dual TVET while focussing on current trends and skills needs in the sectors of renewable energies and energy efficiency. Due consideration was given to cross-cutting TVET topics such as quality management, public-private partnership, workforce demand analysis, curriculum development and digitization. Moreover, the UN Sustainable Development Goals were highlighted in the context of fostering the role of greening TVET.

The course was delivered in a modular format via Moodle, a learning management system that

allows for synchronous and asynchronous learning, with a weekly workload of about four hours. Expert webinars, live discussions and virtual cafés fostered the exchange of expertise, while asynchronous learning sequences with interactive reading exercises, quizzes, videos and podcasts facilitated further understanding and self-reflection related to the contents. To progress from one week's module to the next, participants were required to submit assignments and contribute to online discussion forum.

In the final week, participants collaborated in groups to develop their country-specific Roadmap towards greening TVET: an action plan for a more sustainable, demand-driven TVET in their respective sphere of influence. The roadmaps cover the objectives, challenges, risks, international best practices, preconditions for success and the participants' own potential contributions to guiding questions of greening TVET:

The presentation of the roadmaps in front of an expert panel was the concluding highlight of the course and provided the participants with inspiration for the next steps in their professional contexts. Upon successful completion of all tasks, participants received a certificate and a learning diary with tangible course outcomes in order to capitalize on their learning experience.

In light of the participants' positive feedback and enquiries from other interested parties, GFA will offer the online Green TVET School again in the fall of 2021. Interested parties may enquire more information on the upcoming event via info@tvet-hamburg.de

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