



The European Union's IPA Programme for Albania

TECHNICAL ASSISTANCE FOR INTEGRATED SOLID WASTE MANAGEMENT SYSTEM FOR TWO SELECTED MUNICIPALITIES IN ALBANIA

(EuropeAid/138181/DH/SER/AL)

Task 1.2.4 – Recycling potentials and market situation

Final Report – June 2017

Service Contract No.: 2017-383-743

eptisa

REGIONAL OFFICE FOR SEE
www.eptisasee.com

Task 1.2.4 – Recycling potentials –Final

Project Title:	TA for Integrated Solid Waste Management System for two Selected Municipalities of Albania - EuropeAid/138181/DH/SER/AL
Financing:	IPA
Reference No:	EuropeAid/138181/DH/SER/AL
Starting Date:	27 March 2017
End Date (Duration):	26 September 2019 (30 months)
Contract Number:	383-743
Contracting Authority:	Delegation of the European Union to Albania
Programme Manager:	Mr. Kai NAGEL, Task Manager
Address:	ABA Business Centre; Rr. Papa Gjon Pali II; 1001 Tirana; Albania
Phone:	+ 355 (0) 422 281 07
Fax:	+ 355 (0) 422 706 78
E-mail:	kai.nagel@eeas.europa.eu
Beneficiary:	Ministry of Environment [MoE]
Head of PSC:	Ms. Adriana SOKOLI
Address:	Bulevardi Zhan D'Ark, Nr. 23; 1001 Tirana; Albania
Phone:	+355 4 222 4537
Fax:	+355 4 227 0627
E-mail address:	ardiana.sokoli@moe.gov.al
Contractor:	EPTISA Servicios de Ingeniería S.L. / Eptisa Illyria
Address (Consultant):	Emilio Muñoz, 35-37 – 28037 Madrid
Phone (Consultant):	+ 34 915 949 500
Fax (consultant):	+ 34 914 465 546
Project Director:	Mr. Dritan DIBRA
Address:	Rruga Imbrahim Rrugova Ndertesa 28, Hyrja 9, Kati 5; 1001 Tirana; Albania
Phone:	+ 355 (0) 662060014
E-mail address:	ddibra@eptisa.com
Project Team:	
Address (Project):	Rruga Imbrahim Rrugova Ndertesa 28, Hyrja 9, Kati 5; 1001 Tirana; Albania
Mobile (Project):	+ 355 (0) 666254431
E-mail addresses:	mshigerukaj@eptisa.com

Date of report: 05_2017 / 06_2017

Revision No: -01-

Author of the report: Mr. Ledio IKONOMY [LI]

Approved: Ms. Adriana SOKOLI [Head PSC]

Approved: Mr. Kai NAGEL [Task Manager of EUD].....

Disclaimer

The opinions expressed in this Report are those of the authors and do not necessarily reflect the opinions of the EU Delegation or any other organisation mentioned in the report. As a result, this will be verified before implementation of any of the recommendations contained herein.



LIST OF ABBREVIATIONS

ACRONYMS	MEANING
AAM	Association of municipalities in Albania
AP	Action Plan
BAT	Best Available Techniques
BATNEEC	Best Available Techniques Not Entailing Excessive Costs
BOT	Built Operate Transfer
CBA	Cost Benefit Analyses
GCD	General Custom Directorate
GoA	Government of Albania
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIA	Environmental Impact Assessment
EIB	European Investment Bank
€	Euro
EU	European Union
EUD	European Delegation
FS	Feasibility Study
GIS	Geographic Information System
DCD	General Custom Directorate
GTZ	Gesellschaft fuer Technische Zusammenarbeit (Society for Technical Cooperation for Sustainable Development) = GIZ (since 2011)
IFI	International Financing Institution
IMC	Inter-municipal cooperation
KfW	Kreditanstalt für Wiederaufbau (German Bank for Reconstruction)
LGU	Local Governmental Unit (= see LSG)
LSG	Local Self Government
LWM	Law on Waste Management
MoE	Ministry of Environment
MoF	Ministry of Finance
NWMAG	National Waste Management Advisory Working Group (see PIU)
NWMP	National Waste Management Plan
REC	Regional Environmental Centre for Central and Eastern Europe
PIU	Project Implementation Unit (technical working group = project task force)
PoE	Public owned Entity (owned by local authority=PUC=PUSP)
PPP	Public Private Partnership
PUSP	Public Utility Service Provider
PSC	Project Steering Committee
SME	Small and Medium Size Enterprise
SoE	State owned entity
SW	Solid Waste
SWM	Solid Waste Management
TA	Technical Assistance
TNA	Training Needs Analysis
ToC	Table of Concordance
ToR	Terms of Reference
UNEP	United Nation Environmental Programme
WG	Working Group



ACRONYMS	MEANING
WR	World Bank
WHO	World Health Organization
WWT	Waste Water Treatment
ACRONYMS	LIST OF PROJECT RELATED UNITS (to be updated accordingly)
Mg	Mega gram = 10^6 gram = 10^3 kg = 1 metric ton

GLOSSARY

Abb.	ENGLISH	Abb.	Albanian
INSTAT	Institution of Statistics	INSTAT	Instituti i Statistikave



Table of Contents

0	Executive Summary	7
0.1	Përmbledhje Ekzekutive	7
	0.1.1 <i>Konsiderata të Përgjithshme</i>	7
	0.1.2 <i>Objektivat e Vendit mbi Parandalimin, Riciklimin dhe Rikuperimin</i>	7
	0.1.3 <i>Sasia e mbetjeve bashkiake</i>	7
	0.1.4 <i>Përbërja e mbetjeve bashkiake</i>	7
	0.1.5 <i>Industria Ricikluese dhe Menaxhimi i Mbetjeve në Shqipëri</i>	8
	0.1.6 <i>Potenciali për Rikuperimin e Energjisë Termike</i>	8
	0.1.7 <i>Import-Eksporti i produkteve të riciklueshme</i>	8
	0.1.8 <i>Analizat e çmimit të tregut për llojet e mbetjeve të riciklueshme</i>	8
	0.1.9 <i>Sektori informal i mbledhjes së mbetjeve</i>	9
0.2	Executive Summary	9
	0.2.1 <i>General Consideration</i>	9
	0.2.2 <i>Country Objectives on Prevention, Recycling and Recovery</i>	9
	0.2.3 <i>Amount of municipal waste</i>	9
	0.2.4 <i>Composition of municipal waste</i>	9
	0.2.5 <i>Recycling Industry and Waste Management in Albania</i>	10
	0.2.6 <i>Potential for Thermal Energy Recovery</i>	10
	0.2.7 <i>Import – Export of recycling products</i>	10
	0.2.8 <i>Analysis of market price for recyclable waste fractions</i>	10
	0.2.9 <i>Informal Sector</i>	11
1	Waste amount and recycling	12
1.1	Actual Context of Waste Management and Recycling/Recovery in Albania	12
	1.1.1 <i>General Consideration</i>	12
	1.1.2 <i>Country Objectives on Prevention, Recycling and Recovery</i>	12
	1.1.3 <i>Amount of municipal waste</i>	13
	1.1.4 <i>Composition of municipal waste</i>	15
1.2	Recycling Industry and Waste Management in Albania	18
1.3	Potential for Thermal Energy Recovery	19
1.4	Import – Export of recycling products	19
	1.4.1 <i>Import Activity</i>	19
	1.4.2 <i>Export Activity</i>	20
1.5	Market price analysis for recyclable waste fractions	22
1.6	Informal Sector	22
2	Annexes	24
2.1	Annex 1: Detailed table for recyclable companies operating in Albania	24
2.2	Annex 2: Table of recycling companies that have an Environmental Permit to operate	27
2.3	Annex 3: Material flow diagramme	30

List of Tables

Table 1: Legal deadlines and targets on waste reduction and recycling	12
---	----



Table 2: Legal deadlines for establishment of differentiated waste collection system and waste reduction ...	13
Table 3: Variation of quantity of waste generated (2009-2015) and population 2015 (source MTI).....	13
Table 4: Variation of quantity of waste generated and population 2009-2015 (source INSTAT).....	14
Table 5: Estimation of population coverage with solid waste management service, (Source MTI, INSTAT, calculation by the author)	14
Table 6: Composition of waste as results from various field studies.	15
Table 7: Table of potential recycling and recovery from recyclable waste.....	16
Table 8: Potential and capacity for recycling and energy recover in Albania.....	17
Table 9: Recycling industry in Albania.	18
Table 10: Cement and metal processing plants.	19
Table 11: Waste Import activity for 2015 (Source: GDC).....	19
Table 12: Waste Export activity for 2015 (Source: General Custom Directorate).....	20
Table 13: International prices for purchasing of various categories of recyclable waste	22

List of Figures and Graphs

Figure 1: Imports of Waste for 2015 (Source: GDC)	20
Figure 2: Composition of imported ferrous waste	20
Graph 3: Recyclable waste exports for 2015 (Source: GCD)	20
Graph 4: Exports of paper wastes	21
Graph 5: Plastic Waste Exports	21



0 Executive Summary

0.1 Përmbledhje Ekzekutive

0.1.1 Konsiderata të Përgjithshme

Menaxhimi i mbetjeve në Shqipëri është në një nivel të ulët dhe kjo çështje vlerësohet si një nga prioritetet më prioritare mjedisore për vendin. Për këtë arsye, shumë raporte zyrtare dhe të gjitha Progres Raportet periodike të BE-së për Shqipërinë e kanë ngritur këtë si çështje përgjatë dhjetë viteve të fundit.

Problemet kryesore janë të lidhura me mbledhjen, depozitimin dhe trajtimin e limituar të mbetjeve; ekzistencën e një numri të madh vend depozitimesh të cilat nuk plotësojnë standardet sanitare dhe inxhinierike, duke përfshirë këtu një numër në gjëndje të keqe dhe të pamjaftueshëm pajisjesh.

0.1.2 Objektivat e Vendit mbi Parandalimin, Riciklimin dhe Rikuperimin

Strategjia dhe Plani, duke përfshirë ligjin nr. 10463 të amenduar, kanë përcaktuar hierarkinë e mbetjeve si rrugën drejt menaxhimit të integruar mbetjeve në vend, i cili materializohet përmes vendosjes së afateve kohore dhe synimeve për reduktimin e mbetjeve duke ricikluar, përmes, kompostimit apo incenerimit me rikuperim energjie. Shumë nga afatet kohore dhe synimeve janë ri-përcaktuar nga akte të tjera nënligjore në zbatim të ligjit nr. 10463 të ameduar.

Për të ilustruar gjendjen, synimet dhe afatet kohore përfshijnë 25% reduktim nga fundi i vitit 2015, 55% për vitin 2020 dhe 75% nëpërmjet riciklimit dhe kompostimit, apo sic është dhe pezullimi i prodhimit, importimit dhe marketimit të qeseve plastike me një trashësi në 30 µ deri në 1.09.2012.

Megjithatë, asnjë nga afatet kohore dhe synimeve respektive nuk janë arritur, sikundër dhe aktet ligjore nuk janë zbatuar, për këtë arsye rishikimi dhe ripërcaktimi i synimeve dhe afateve kohore, në një mënyrë që mund të përputhet me specifikimet financiare dhe kushtet teknike të vendit është i domosdoshëm.

0.1.3 Sasia e mbetjeve bashkiake

Institucione të ndryshme publikojnë sasi të ndryshme mbetjesh qoftë të gjeneruara ashtu edhe të depozituara në vend. Në vitin 2015, bazuar në të dhëna të publikuara nga INSTAT, është raportuar se sasia totale e mbetjeve të gjeneruara në nivel kombëtar është rreth 1,413,233 Mg, me një mesatare prej 0.491 Mg/banorë/vit, më e lartë se mesatarja e 28 vendeve të BE-së. Për të njëjtin vit, të dhënat e publikuara nga MTI bazuar në vlera siç janë raportuar nga bashkitë, tregojnë se sasia e gjeneruar e mbetjeve në vend është rreth 951.397 Mg/vit me një mesatare kombëtare prej 0.232 Mg/banorë/vit.

Referuar popullsisë, shifrat gjithashtu janë të ndryshme, ndërkohë që INSTAT raporton një popullsi rezidente prej 2,880,703 banorësh, bashkitë referojnë një popullsi të regjistruar prej 4,097,483 banorësh.

Nëse marrim në konsideratë popullsinë e raportuar nga INSTAT dhe mbetjet e gjeneruara për banorë bazuar në publikimin e MTI-së, na rezulton një mesatare kombëtare prej 699,820 Mg/vit ose 0.243 Mg/banorë/vit, e cila mund të konsiderohet si një bashkim më real i të dhënave të INSTAT dhe MTI-së. Gjithsesi, kjo situatë është mjaft problematike, dhe nevojitet të adresohet në të gjitha nivelet vendimmarrëse në mënyrë që të krijohet një vlerë bazë përfundimtare dhe përcaktuese.

0.1.4 Përbërja e mbetjeve bashkiake

Të dhënat mesatare të bazuara në burime të ndryshme, më së shumti projekte të cilat kanë bërë anketime të mbetjeve në Shqipëri, tregojnë në nivele mesatare se përbërja e mbetjeve të riciklueshme të variojë nga 35% në 65%; ndërkohë, pjesa tjetër konsiderohet si mbetje të njoma



të biodegradueshme dhe më pak lloje të tjera si mbetje nga kafshët, inerte, elektronike, sanitare etj.

Duke marrë në konsideratë sasi të gjeneruara të mbetjeve, bazuar në të dhënat e INSTAT, dhe duke supozuar që vetëm 40% e rrymave totale të mbetjeve mund të jenë efektive/ të dobishme për riciklim dhe/ose me vlera të rikuperueshme termo/elektrike, potenciali për riciklim/rikuperim, vlerësohet në rreth 565,293 Mg/vit, kundrejtë 19,336 Mg/vit, e cila aktualisht është sasia e ricikluar e raportuar në vitin 2015 e bazuar në të dhëna të publikuara nga SHRSH.

Duke supozuar që vetëm 60% e mbetjeve të riciklueshme është e rikuperueshme, mund të vlerësohet se sasia efektive e mbetjeve të dobishme për riciklim llogaritet në rreth 339,176 Mg/vit, e cila përbën vetëm 68% të kapacitetit vjetor përpunues të industrisë së riciklimit, në nivel kombëtar.

Nga ana tjetër, kjo sasi mund të përdoret në mënyrë alternative për rikuperim të energjisë elektrike përmes incenerimit. Tashmë Shqipëria ka planifikuar një kapacitet incenerimi prej afro 270,000 Mg/vit (Elbasan, Fire dhe Tiranë), e cila është më i madh se sasia efektive e mbetjeve të riciklueshme të djegshme të cilat mund të gjenerohen dhe diferencohen në nivel kombëtar.

Nën këto kushte, nëse QSH vijon me zbatimin e kësaj politike p.sh. ndërtimin e të tre inceneratorëve të programuar, atëherë duhet të hartohet një plan operacional shumë i detajuar dhe funksional në mënyrë që të grumbullojë mbetjet e riciklueshme nga i gjithë vendi në këto tre inceneratorë. Në të kundërt, QSH duhet të rishikojë planet e saj për të synuar një shpërndarje më të mirë të burimeve financiare, në mënyrë të tillë që të arrihen objektivat strategjike kombëtare të menaxhimit të integruar të mbetjeve.

0.1.5 **Industria Ricikluese dhe Menaxhimi i Mbetjeve në Shqipëri**

Ashtu siç raportohet edhe nga Shoqata e Ricikluesve të Shqipërisë (SHRSH), janë rreth 38 kompani riciklimi të anëtarësuar në këtë shoqatë, të cilat punojnë në Shqipëri me materiale të riciklueshme (shiko Shtojca 1). Thuhet se industria kap një vlerë investimi prej rreth 234.2 milionë euro dhe një kapacitet të instaluar prej rreth 298.480 Mg/vit.

Këto të dhëna tregojnë qartë për një shkallë shumë të ulët riciklimi që ndodh tashmë në vend dhe nga ana tjetër, potencialin e vendit për të përpunuar sasi më të mëdha të mbetjeve.

0.1.6 **Potenciali për Rikuperimin e Energjisë Termike**

Të paktën 7 impiante, kryesisht për prodhimin e gëlqeres dhe çimentos, të cilat përdorin energji termike në procesin e tyre të përditshëm të prodhimit, janë në funksionim në Shqipëri. Këto impiante, për të furnizuar furrat e tyre, mund të përdorin mbetje të djegshme, të tilla si letra, plastika, goma, druri, etj., të cilat nuk ofrojnë cilësi për industrinë e riciklimit, duke na dhënë kështu kapacitete shtesë për trajtimin përfundimtar të disa rrymave të mbetjeve.

0.1.7 **Import-Eksporti i produkteve të riciklueshme**

Aktiviti i import-eksportit të mbetjeve të riciklueshme është shumë dinamik në vend. Në vitin 2015, bazuar në të dhënat e lëshuara nga DPD, vendi ka importuar rreth 11,784 Mg, nga të cilat 99,8% janë metale kryesisht alumin.

Në të njëjtën kohë, për të njëjtin vit, industria vendase ka eksportuar rreth 15.388 Mg materiale të riciklueshme, prej të cilave 52% letër, 31% metale dhe 17% plastike.

0.1.8 **Analizat e çmimit të tregut për llojet e mbetjeve të riciklueshme**

Çmimet për kategori të ndryshme të mbetjeve, variojnë në vende të ndryshme. Në krahasim me vendin tonë, çmimet për letrën/kartonin e cilësive të ndryshme variojnë nga niveli i ulët prej 44.5 €/Mg në Shqipëri deri në 200 euro/Mg në Indi. E njëjta situatë vlen edhe për mbetjet plastike dhe mbetjet e tjera të riciklueshme.

Në tregun kombëtar dhe ndërkombëtar, materialet me ngjyra (jo-ferrose) janë ato materiale që janë më të nevojshme për riciklim dhe kanë një çmim më të lartë në krahasim me materialet e tjera të riciklueshme. Pra, çmimi i bakrit varion nga 3,864 €/Mg në Shqipëri në 6,520 €/Mg në Gjermani.



0.1.9 Sektori informal i mbledhjes së mbetjeve

Vlerësohet se rreth 12,000 persona kryesisht nga komuniteti Rom e bazojnë jetesën në mbledhjen dhe shitjen e mbetjeve të riciklueshme nga kontnrierët, bizneset dhe burimet e tjera. Ky sektor gjithashtu ndihmon në mbrojtjen e burimeve natyrore dhe mjedisit, duke grumbulluar dhe derivuar në treg 2% deri në 3% të totalit të mbetjeve për riciklim. Meqenëse legjislacioni në fuqi ka ndaluar importimin e mbetjeve të destinuara për riciklim, burimi i vetëm i materialeve të riciklueshme për industrinë e vendit sigurohet nga rrjeti i mbledhësve joformalë.

0.2 Executive Summary

0.2.1 General Consideration

Waste management in Albania is at a low level and that this topic is estimated as one of the highest environment priorities for the country. As such, many official reports and all sequential EU Progress Reports for Albania have brought up this issue over the last ten years. Main problems are related to limited collection, unsafe disposal and lack of treatment and minimisation of waste, the existence of a large number of dump sites, not fulfilling minimum sanitary and engineering standards, including inadequate amount and poor mechanisation.

0.2.2 Country Objectives on Prevention, Recycling and Recovery

The Strategy and the Plan, including the law **no.10463**, as amended, are defining the waste hierarchy as the road map of waste management for the country, which is materialized through setting deadlines and targets for waste reduction through recycling and recovery by processing, composting or incineration with energy recovery. Many of the deadlines and targets have been re-set by other legislation pursuant to the law 10463.

To illustrate the situation targets and deadlines are including a 25% reduction by end of 2015, 55% by 2020 and 75% from recycling and composting, or the ban on production, import and marketing of plastic bags with a thickness up to 30 µ from 01.09.2012 onwards.

Nevertheless, none of the deadlines and respective targets has been achieved; none of the acts are enforced. Therefore a thoughtfully revision and resetting of targets and deadlines have to be undertaken allowing a matching of aims with specific financial and technical conditions of the country.

0.2.3 Amount of municipal waste

Various institutions publish different waste amounts, either generated or collected and disposed in the country. In 2015, based on data published by INSTAT, it is reported that the total amount of waste generated at country level is around 1,413,233 Mg, with an average of 0.491 Mg/inhabitant/year higher than annual average of EU 28 countries. For the same year data released from MTI based on figures as reported from municipalities indicate that waste amount generated in the county is about 951.397 Mg/year for an annual country average of 0.232 Mg/capita/year.

Referring to the number of population (PE) are also remarkable differences recognisable, while INSTAT reports a resident population of about 2,880,703, municipalities refer to the registered amount of 4,097,483 habitants and the Ministry of Finance bases its calculation on the census 2011 with factor 1.3.

If we take the resident population as reported from INSTAT and the waste per capita generated based on MTI publication into account, an average of about 699,820 Mg/year or 0.243 Mg/cap/year is the outcome, which seems a reconciliation between INSTAT and MTI data. However, this situation is very problematic and needs to be addressed and harmonised at all decision-making levels, so that a final and definite baseline is established.

0.2.4 Composition of municipal waste

Average data based on various sources, mostly projects that have carried out sampling of waste in Albania, indicating an average amount of recyclable waste varies from 35 % to 65% while the



remainings are composed from other types of waste mainly wet biodegradable waste and less other items such as animal, electronic, inert, sanitation etc.

Taking in consideration generated waste amount based on INSTAT data and assuming that about only 40 % of total waste streams could be effective/useful for recycling and thermo/electrical recovery values, the potential for recycling/recover, is estimated at about 565,293 Mg/year, against 19,336 Mg/year which is the amount currently recycled, based on data released from the Albanian Recycling Association (ARA).

Assuming that only 60% of recyclable waste is recoverable, it is estimated that effective amount of waste useful for recycling accounts for about 339,176 Mg/year equal to 68% of the annual installed processing capacity of recycling industry at country level, whereas the difference of 40% or 226,117 Mg/year could be designated for energy recovery, mainly as fuel for cement industry.

Alternatively, this amount can be used for electrical energy recovery through incineration. Albania has already planned an incineration capacity of about 270,000 Mg/year (Elbasan, Fier and Tirana), which is much higher than the amount of effective combustible recyclable waste, when compared with the potential amount of waste, which can be generated and separated even at country level.

Under the circumstance, that the GoA will follow this policy of installation of oversized thermal treatment plants, a very detailed and functional operational plan has to be designed, allowing to incorporate all wastes from all over the country within these three facilities. The current policy of installation of thermal treatment is in contraction of the national strategy. Another reason, that the review/redo of the national strategy is necessary harmonising strategic approaches with current ongoing activities.

0.2.5 Recycling Industry and Waste Management in Albania

As reported by the Albanian Recycling Association (ARA), there are about 38 members joining in this Association, operating in Albania and processing recycled materials (see annex 2.1). The industry captures an investment market value of approximately EUR 234.2 million and an installed capacity of about 298,480 Mg/year (50% of recycling potential). These data clearly indicates a very low rate of recycling happening in the country, and of the other side, for the country's potential to elaborate further amounts of waste.

0.2.6 Potential for Thermal Energy Recovery

At least 7 plants, mainly for production of limestone and cement, using thermal energy in their daily production process, are operated in Albania. These plants can use combustible waste such as paper, plastic, rubber, wood etc., material below the quality expectation of the recycling industries. Use of remaining recyclables (medium and high calorific values) can be made for fuelling their furnaces, indicating additional capacities for final treatment of certain waste streams by RDF / SRF.

0.2.7 Import – Export of recycling products

Import – export activities of recyclable waste is ongoing in the country. In 2015, based on data released from GDC the country has imported about 11,784 Mg, of which 99.8 % are metals mostly aluminium. The domestic industry has exported about 15,388 Mg of recyclable material, out of which 52 % paper, 31% metals and 17% plastic within the same period.

0.2.8 Analysis of market price for recyclable waste fractions

Prices for different wastes / recyclables are varying for different countries. In comparison to Albania are prices for paper/cardboard of different qualities varying from as low as 44.5 €/Mg in Albania to as high as 200 €/Mg in India. The same situation is relevant at plastic and other commercial recyclable waste.

In the national and international market, non-ferrous materials are those, which are most required for recycling and achieving higher market prices compared to other recyclable materials. The price for copper varies for as low as 3,864 €/Mg in Albania as compared to 6,520 €/Mg in Germany.



0.2.9 Informal Sector

It is estimated that about 12,000 individuals, mostly from Roma community are earning their living from the collection and selling of recyclable waste from kerbside containers, businesses and other resources. This sector also helps to protect natural resources and environment, by recovering up to 2% - 3% of the recyclable waste. Since the legislation in power has banned the import of waste designated for recycling, the network of informal waste pickers provides the only source of recyclable materials for the industry of the country.



1 Waste amount and recycling

1.1 Actual Context of Waste Management and Recycling/Recovery in Albania

1.1.1 General Consideration

In many official documents, it is widely accepted that waste management in Albania is at a low level and that this issue is one of the highest environment priorities for the country. In addition, this issue has been brought as such by all sequential EU Progress Reports for Albania over the last ten years.

The problems are related mainly with the partial area covered with service, the limited collection and disposal of waste, the trivial amount of waste deposited in landfill, the existence of a large number of dumping sites (authorized and unauthorized) that do not fulfill the sanitary and engineering standards. Other problems are related to inadequate number and poor quality of waste collection and transportation equipment, lack of differentiated waste collection system and low recycling percentage, including also unexpected changes of policies course in the sector.

In 2015, based on data published by INSTAT, it is reported that the total amount of waste generated at country level is around 1,413,233 Mg, with an average of 0.396 Mg/inhabitant/year or 1.08 kg/inhabitant per day.

The figures as in the above table are only related to household waste; they do not account for construction and demolition waste nor do these data provide information about hazardous waste or any other waste category.

1.1.2 Country Objectives on Prevention, Recycling and Recovery

The Strategy and the Plan, including several DCMs pursuant to law no.10463, as amended, have set deadlines and targets for waste reduction through recycling and recovery by processing, composting or incineration with energy recovery.

In general, in the context of the law on integrated waste management and in particular Chapter III, assumes that an effective and efficient waste collection system is already in place covering most of the country and ensuring for a maximal collection, therefore, implementation of the waste hierarchy reduction, reuse and recycling would remain the major objectives for the country. All data show that waste collection system in the country is inadequate and inefficient. This finding is found in many documents including consecutive EU Progress Reports as well.

The deadlines as are set in chapter 3 of article 18 of the law on integrated waste management, have enforced the issuance of several DCMs, to mentioned DCMs 177, 452, 418 and 608 etc. All these bylaws have reset the deadline to meet the targets for waste reduction and reuse through recycling, composting, and landfilling. All deadlines as set forth as above-referred DCMs either have already been exceeded or are at the bridging threshold.

Table 1: Legal deadlines and targets on waste reduction and recycling

Act	2015		2017		2019		2020		2025	
	Recyc.	Comp.	Recovery or Incineration with Power Generation	Recyc.	Recovery or Incineration with Power Generation	Recyc.	Recyc.	Comp.	Recyc.	Comp.
Unit	%	%	%	%	%	%	%	%	%	%
NPWM	25	25					55	55	75	75
Law 10463										
DCM 418							50 ¹			

¹ 50 % of the amount generated on 2014



DCM 608								50 ²		65 ³
DCM 177			50-65 ⁴	25 – 45 ⁵	60 ⁶	55-80 ⁷				

As it is shown in the Table 2 above and the following Table 3 below the deadlines for establishment of differentiated waste collection system and other measures that would lead to waste reduction are confusing and unrealistic, therefore they would need thoughtfully revised and reset in a way that would match with specific financial and technical conditions of the country.

Table 2: Legal deadlines for establishment of differentiated waste collection system and waste reduction

Action / Act	NPWM	Law 10 463	DCM 418	DCM 608	DCM 177
Separate collection	-	31.12.2018 ⁸	31.12.2106 ⁹ 31.12.2018 ¹⁰	31.12.2107 ¹¹ 31.12.2018 ¹²	
Ban for production, import, marketing of plastic bags up to 30μ thick					1.09.2012
Ban on the use of bags up to 30μ thick from all trade entities					1.01.2013

In order illustrating problems with law enforcement on an example, the case of DCM 177 among those DCMs which implementation and enforcement is neglected. DCM 177 has set the deadline of 01.09.2012 when the responsible institutions would have not allowed any longer the production, import and marketing of plastic bags with a thickness up to 30 μ, whereas within 01.01.2013 all trade entities would not have been allowed to use these bags after the deadline. However, evidence indicates that these restrictions are not in force, while plastic bags makes one of the most popular polluters of environment, especially surface water bodies all over the country.

1.1.3 Amount of municipal waste

The amount of municipal waste is analyzed based on two sources: (i) data reported by municipalities as collected from the MTI, and (ii) data reported by INSTAT.

Table 3: Variation of quantity of waste generated (2009-2015) and population 2015 (source MTI)

Year	2009	2010	2011	2012	2013	2014	2015
Waste amount (Mg/year)	857,403	1,069,094	1,077,997	1,136,802	1,039,455	760,407	951,397
Population							4,097,481
Waste amount (Mg/cap/year)							0.232

Based on data released from municipalities, calculations indicating that the annual per capita generation of waste in 2015 were about 0.232 Mg/year, which is transposed to a daily generation of about 0.65 kg/cap/day at an average at county level. This figure is estimated

² In 2025 reduce 50% e of the amount generated on 2014

³ 65% of the amount generated on 2014

⁴ Waste from the packaging

⁵ Of the weight of recyclable materials

⁶ Waste from the packaging

⁷ Weight from the packaging

⁸ All local units

⁹ First class Municipality

¹⁰ Second class Municipality

¹¹ Municipality county center

¹² Other Municipalities



reasonable high for Albania and lower as 50% as compared to the average (0.477 Mg/cap/year) of EU 28 countries.

Table 4: Variation of quantity of waste generated and population 2009-2015 (source INSTAT)

Year	2009	2010	2011	2012	2013	2014	2015
Waste amount (Mg/year)	857,223	1,069,094	1,077,997	1,136,802	937,901	1,228,884	1,413,223
Population	2,927,519	2,913,021	2,905,195	2,900,401	2,895,092	2,889,104	2,880,703
Waste/cap/year (Mg/year)	0.293	0.367	0.371	0.392	0.324	0.425	0.491

When addressing the issue of waste generation in the country and referring to the data as published by INSTAT, following problem occurs. Table 4 above indicates the waste amount generated in Albania for a period of 7 years starting from 2009 up to 2015. Referring to INSTAT data, from 2009 to 2015, evidence on an increase of waste generation with an annual average of about 7% is given, compared to an annual average decrease of population of about -0.3%

Calculations indicated that annual waste generation of waste per capita in 2015 was about 0.491 Mg/year, which is transposed to a daily generation of about 1.34 kg/cap/day at an average countrywide. This estimated figure is excessively high for Albania and even higher in comparison to the average (0.477 Mg/cap/year) of EU 28 countries (or EU10).

The following table shows a merging of data on population, amount of waste as reported from INSTAT and data on service coverage as collected by the MTI based on annual reports of municipalities.

Table 5: Estimation of population coverage with solid waste management service, (Source MTI, INSTAT, calculation by the author)

Region	Number of inhabitants	Annual amount of household waste (Mg/year)	Annual waste per capita (Mg / inhabitant / year)	Daily waste per capita (kg / inhabitant / day)	Number of habitants benefiting from the service	Service coverage
BERAT	138,365	36,252	0.262	0.72	95,472	69%
DIBËR	131,054	25,687	0.196	0.54	73,390	56%
DURRËS	277,989	94,794	0.341	0.93	247,410	89%
ELBASAN	290,666	72,667	0.250	0.68	148,240	51%
FIER	308,014	93,020	0.302	0.83	218,690	71%
GJIROKASTËR	69,557	16,694	0.240	0.66	47,299	68%
KORÇË	220,196	58,572	0.266	0.73	173,955	79%
KUKËS	82,428	15,332	0.186	0.51	26,377	32%
LEZHË	131,829	27,289	0.207	0.57	76,461	58%
TIRANË	213,148	70,126	0.329	0.90	193,965	91%
SHKODËR	834,151	146,811	0.176	0.48	483,808	58%
VLORË	188,399	42,578	0.226	0.62	120,575	64%
County	2,885,796 ¹³	699,820 ¹⁴	0.243 ¹⁵	0.68 ¹⁶	1,905,641	65% ¹⁷

Calculations as in the table above are based on the population of 2015 as published from INSTAT and waste amount generated per capita/year and service coverage as calculated based on data reported by municipality. Calculations yield an amount of waste per capita generated at daily bases is of a value of about 0.68 kg/cap/day and a countrywide average of waste collection rates of about 65 %.

¹³ Population based on INSTAT 2015.

¹⁴ Amount of waste based on calculation of daily waste per capita multiplied with population.

¹⁵ Pondered average of Annual waste per capita based on reports from municipalities to MTI

¹⁶ Daily waste per capita based on reports from municipalities to MTI.

¹⁷ Service coverage based on reports from municipalities to MTI.



These data could be considered acceptable in the Albanian context. It is obvious, that a harmonisation of data structures, reporting schemes and data processing is of highly importance for a country wide waste management planning (ongoing master plan development).

1.1.4 Composition of municipal waste

From field measurements that are carried out in the framework of various projects in different cities of the country and as compared to data as indicated in the above chapter, the average on waste generation per capita in urban areas is estimated at 0.55 to 0.6 kg per person per day, while in rural areas at about 0.3 - 0.4 kg / inhabitant / day. These data show to be relatively lower than those stated within the Strategy and the Plan and much lower compared to data published by INSTAT.

The assessment carried out from INPAEL has shown that municipal waste is composed from about main 17 components. Mixed waste or otherwise referring as mostly biodegradable waste accounts for about 66% of the total, while the rest of 34% represent recyclable components, such as 40% paperboard, 39% plastics, ferrous metals and 4% nonferrous metals as well as glass 17%.

Table 6: Composition of waste as results from various field studies.

Municipal Waste	National Survey (INPAEL) ¹⁸ (%)	1 st JICA ¹ : Municipality of Tirana (%) ¹⁹	2 nd JICA ¹ : Municipality of Tirana (%) ²⁰	Lezha ²¹ Municipality Study (URI)	Shëngjin ²² Municipality Study (URI)	Berat ²³ Municipality Study (URI)
Organic	47.36	46.39	34.90	53	49.8	65
Wood and waste from the garden	1.43	2.85	4.68			
Paper	5.37	17.39	18	22	19.4	13
Card		8.13				
Plastic LD	8.46	17.39	16.6	6	18.6	14
Plastic HD		4.75				
Glass	5.75	3.21	3.53	16	10.2	6.5
Textiles	5.27	3.15	3.53			
Metals-ferrous	0.56	2.16	1.22	3	2	1.5
Non-ferrous metals,		0.57				
Hospital Waste	0.17					
Rubber Waste	0.2					
Inert	7.20	1.6	14.09			
Sanitation	3.25					

¹⁸ INPAEL & Co-PLAN's Survey, in the framework of National Waste Management Plan, 2009

¹⁹ JICA Survey (2012), weighted mean computed by the population ratio of each income group for 28 domestic waste samples

²⁰ JICA Survey (2012), weighted mean computed by the waste collection amount of each collection areas for 60 incoming waste samples at Sharrë

²¹ "Support Inter-LGU Cooperation and Organization of Waste Management Service in Lezha and Shëngjin" URI

²² "Support Inter-LGU Cooperation and Organization of Waste Management Service in Lezha and Shëngjin" URI

²³ Feasibility study for PPP for waste management in Berat Municipality. URI



Municipal Waste	National Survey (INPAEL) ¹⁸ (%)	1 st JICA ¹ : Municipality of Tirana (%) ¹⁹	2 nd JICA ¹ : Municipality of Tirana (%) ²⁰	Lezha ²¹ Municipality Study (URI)	Shëngjin ²² Municipality Study (URI)	Berat ²³ Municipality Study (URI)
Waste						
Electrical - electronics Waste	0.31					
Battery	0.02	0.17	0.06			
Animal Waste	1.08					

Although, less detailed measurements as conducted from other projects and as specified in the above table, delivered figures slightly differ from those published and promoted by INPAEL. Amount of mixed biodegradable waste varies from as low as 34.9 % (Tirana second assessment JICA, 2012) to as high as 65 % (Berat, Feasibility Study, URI, 2014), yielding an average of about 44.4%.

Whereas, amount of recyclable waste varies from as high as 63.1% (Tirana second assessment JICA, 2012) to 35 % (Berat, Feasibility Study, URI, 2014), yielding an average of about 50.6 % at country level, showing therefore for a high composting and recycling potential.

Regardless the source, data indicate that there is an important potential for recycling in the country, Based on waste amount as reported from INSTAT, assuming that about only 40 % of total waste streams could be of effectively/useful recycling and thermo/electrical recovered, the potential for recycling/recover is estimated at about 565,293 Mg/year, against 19,336 Mg/year which is the amount currently recycled based on data released from the Albanian Recycling Association.

Table 7: Table of potential recycling and recovery from recyclable waste

Administrative level	Amount of waste (Mg/year)	Potential for recycling (Mg/year)	Current declared recycling amount (Mg/year)	Current declared recycling rate (%)
National	1,413,233	565,293	19,336	3%
Berat	59,356	23,742	2,222	9%
Diber	35,331	14,132	n/a ²⁴	n/a
Durres	145,563	58,225	n/a	n/a
Elbasan	105,992	42,397	4,200	10%
Fier	250,142	100,057	n/a	n/a
Gjirokaster	55,116	22,046	4,014	18%
Korce	101,753	40,701	n/a	n/a
Kukes	11,306	4,522	n/a	n/a
Lezha	50,876	20,350	580	3%
Shkoder	84,794	33,918	n/a	n/a
Tirana	371,681	148,672	8,320	6%
Vlore	141,323	56,529	n/a	n/a

A series of assumptions have been made to generate the above table, to include that:

- Useful recyclable waste amount is estimated at 60% of total recyclable waste;
- The difference of 40% is estimated as not effective for recycling therefore useful for either thermal or electrical energy recovery.

²⁴ Not available data



Table 8: Potential and capacity for recycling and energy recover in Albania

Administrative level	Estimated recyclable waste amount (Mg)	Estimated useful recyclable waste amount (as % of total) (Mg)	Capacity of recycling industry (Mg/year)	% of Complement capacity of recycling industry (%)	Estimated waste for thermal energy recovery - as % of total if recyclable (Mg/year)	Capacity of industry for thermal energy recovery (Mg/year)	Alternative estimated waste for energy recovery (as 10% of total recyclable waste) (Mg/year)	Current design potential for energy recovery (Mg/year)	% not complement capacity of incineration capacity (%)
National	565,293	339,176	498,480	68%	226,117	n/a	226,117	270,100	84%
Berat	23,742	14,245	9,600	148%	9,497	-	9,497	-	n/a
Dibër	14,132	8,479	n/a ²⁵	n/a	5,653	-	5,653	-	n/a
Durrës	58,225	34,935	78,120	45%	23,290	n/a	23,290	-	n/a
Elbasan	42,397	25,438	322,200	8%	16,959	n/a	16,959	51,100	33%
Fier	100,057	60,034	960	6254%	40,023	-	40,023	73,000	55%
Gjiroka	22,046	13,228	n/a	na	8,819	-	8,819	-	n/a
Korcë	40,701	24,421	4,800	509%	16,280	-	16,280	-	n/a
Kukës	4,522	2,713	n/a	n/a	1,809	-	1,809	-	n/a
Lezha	20,350	12,210	3,600	339%	8,140	n/a	8,140	-	n/a
Shkodër	33,918	20,351	n/a	n/a	13,567	-	13,567	-	n/a
Tirana	148,672	89,203	79,200	113%	59,469	-	59,469	146,000	41%
Vlorë	56,529	33,918	n/a	n/a	22,612	-	22,612	-	n/a

Based on the above assumptions and available data, as indicated in the above table, it is estimated that effective amount of waste useful for recycling accounts for about 339,176 Mg/year, equal to 68% of the annual installed processing capacity of recycling industry at country level, whereas the difference of 40% (equal to 226,117 Mg/year) could be designated for energy recovery. This amount can be used as fuel form already installed industry for cement and limestone production, which thermal capacity is assumed to be several times the amount of combustible waste that can be generated in the country.

Alternatively, this amount can be used for electrical energy recovery through incineration. While Elbasan incinerator is already operational, Albania has designed two other such facilities, one in Fier and another one in Tirana with a total processing capacity of about 270,000 Mg/year²⁶. Designed incineration capacity is much higher than the amount of effective combustible recyclable waste when compared with the potential amount of waste, which can be generated and separated for each respective regions of Elbasan, Fier and Tirana. Incineration capacity is also higher or as much as at least 14 % of the total (countrywide) recyclable waste amount that can be effectively used for energy recover. Under the circumstance that the GoA will continue to follow the incineration strategy, a very detailed and functional operational plan has to be designed to bring all waste from all over the country to these three facilities. Otherwise, the GoA should revise its plans to target a better and more efficient of financial resource allocation, so that country strategic objectives are achieved. The current implementation and extension of oversized incinerators is against the current valid national strategy.

To sum up as above it is delineated, we can come up the following findings:

- All deadlines that are establishment of differentiated waste collection system and other measures that lead to waste reduction are unrealistic and therefore requires a thoughtfully revision and reset allowing matching with specific financial and technical conditions of the country.

²⁵ Data not available

²⁶ Elbasan 120 – 140 ton/day; Fier 180 – 200 ton/year; although there are no data, Tirana is assumed at 400 ton/day



- Data on waste amount are cumbersome in Albania. All would agree that this issue need to be tackled urgently at its best possible way, otherwise planning of service improvement and capital investments to achieve strategic objectives of the country would be very difficult and lead to wrong directions.
- The GoA should substantially revise the waste treatment policy; current incineration capacities overcome the amount of potential recyclable waste that can be sued, from the economic point of view, for incineration. A better planning would lead to a more efficient use of financial resources, so that country strategic objectives are achieved.

1.2 Recycling Industry and Waste Management in Albania

Recycling is one of the most essential elements of waste management; perhaps the most well known form of waste reduction developed through a chain of processes including separation at source, collection, selection and processing, allowing a significant reduction of a large amount of waste from landfill and avoiding final disposal.

Organized and effective separate collection of waste for recycling purpose is almost inexistent in Albania, except for a network of informal waste pickers organized in family based groups or individuals, mostly from Roma community, who collect recyclable waste from waste bins or in the streets (mainly paper/cardboard, plastic and non-ferrous metal). Informal waste pickers are connected with various recycling businesses, which possess collections and processing facilities and buy the materials from them. Referring to the data released from MTI, it is officially reported that about 19,336 Mgs or about 3% of the total waste amount generated in the country are recycled.

Besides reducing the amount and volume of solid waste, recycling offers many direct and indirect benefits. Such benefits, without limitations, provide for the use of recyclable materials as raw material while preserving natural resources, reducing costs for production of other products, increasing lifespan of waste disposal plants and reducing costs of treatment of waste in these plants. Other social and economic benefits include employment, profits and incomes for entities and other stakeholders involved in recycling industry.

As reported by the Albanian Recycling Association (ARA), are about 38 members joining this Association, operating in Albania. (see annex 1). The industry captures an investment market value of approximately EUR 234.2 million.

Table 9: Recycling industry in Albania.

Year	Number of companies	Number of workers employed	Installed production capacity (Mg/month)	Market value Million €
2015	38	2,073	41,540 ²⁷	243.2

These companies currently have a capacity of 41,540 Mg / month or about 498,480 Mg/year, which, if there were adequate waste management system for separation at source and differentiated waste collection, would be sufficient to absorb almost all-recyclable (90%) waste that could be generated in the country. As it is reported from these companies, they are currently using only an average capacity of about 26.8%, which in one side indicates or the very low rate of recycling happening already in the country, and of the other side, for the country's potential to elaborate further amounts of waste

In addition, of the companies that are members of ARA, there is a list published by the MoE, which indicates that the number of operators that currently have an environmental permit working in the recycling sector are about 57 (Including ARA members). Nevertheless, the list provided by MoE does not provide further information about the installed and used capacity or the specific company/ operator profile. (see annex 2.2)

²⁷ Excluding wood processing facilities with a capacity of about 8000 ton/month



1.3 Potential for Thermal Energy Recovery

In Albania, there are several plants, mainly for limestone and cement production, which use thermal energy in their daily production process. These plants can use calorific waste, such as paper, plastic, rubber, wood etc. that do not provide the quality for recycling industries, for fueling their furnaces.

Table 10: Cement and metal processing plants.

Name of company	Capacity	Operation Field	Thermal Capacity	City
Titan Antea Cement	1.5 million Mg / year cement and 3.300 Mg / day clinker	Produce Cement & Clinker	n/a	Boka e Kuqe, Borizane, 50 km away from Tirana
Colacem Albania	n/a	Produce Limestone & Cement	n/a	Balldre km7, Lezhë
FKCF Cement Factory	n/a	Produce limestone, cement and different mix designs	n/a	Fushe – Kruje
Europa L.t.d	n/a	Metal structures production, installation and installation of metal constructions	n/a	Elbasan, near with Metallurgical Compound
PAPMETAL L.t.d	n/a	Producer of tubular steel profiles; various steel sheets	n/a	Xhazotaj km 3, Durres
Polyplast L.t.d	n/a	Producer of containers with a capacity of 300-5000 lt, drinking water and juice deposits	n/a	Former Metallurgical, plant Elbasan

The companies in the above table are currently active and operating in various cities in Albania. It should be noted that besides the above listed of companies, there are father operators but lacking on information regarding their production and thermal capacity.

1.4 Import – Export of recycling products

1.4.1 Import Activity

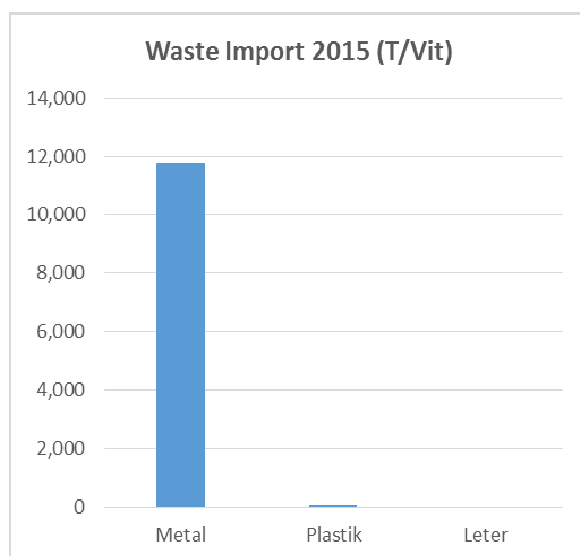
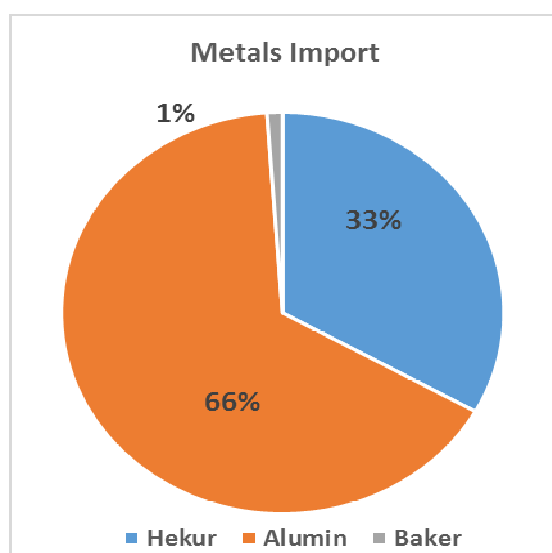
According to official data released from the General Customs Directorate (GDC) it is reported that an amount of about 11,784 Mg is imported in 2015.

Table 11: Waste Import activity for 2015 (Source: GDC)

Import			
	Metal	Plastic	Paper
Mg	11,757	27	0
In %	99.8%	0.2%	0.0%
	Steel	Aluminum	Copper
Mg	3,899	7,724	134
In %	33%	66%	1%

Referring to this reports and as it is shown in the above table and the following graphs, most of the imported amount or about 99.8 % are metal scrap, composed of 33% iron/steel, 66% aluminum and only 1 % copper.



Figure 1: Imports of Waste for 2015 (Source: GDC)**Figure 2: Composition of imported ferrous waste**

1.4.2 Export Activity

As data released from GCD indicated, there is a relatively high activity in the export of recyclable waste due to the changes in the stock price of recycled products in those countries where import of wastes are permitted. In 2015, a total of 15,388 Mg of recyclable waste was exported.

Table 12: Waste Export activity for 2015 (Source: General Custom Directorate)

Export				
	Metal	Plastic	Paper	Total
Mg	4,823	2,588	7,976	15,388
In %	31%	17%	52%	
	Steel	Aluminum	Copper	Total
Mg	2,005	1,247	1,571	4,823
In %	42%	26%	33%	

Graph 3: Recyclable waste exports for 2015 (Source: GCD)



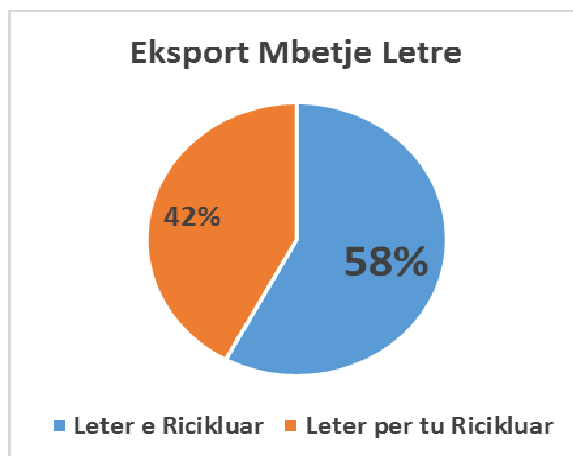
Export of metals contributes with a

round 31% of the total waste that is exported, most of which are ferrous scrap (cast iron and iron ingots (42%) and the rest is aluminium and copper shavings.

Graph 4: Exports of paper wastes



Graph 5: Plastic Waste Exports



Reports from GCD indicate that paper and cardboard poses the highest amount of exported material (52%) from which 58% is processed and marketed as raw material and 42% is not processed (Graph 5).

As for plastics waste (graph 4), which poses 17% of the total exported wastes, most of it (87%) is exported processed and sold as raw material in neighboring countries. While the rest (13%) is sold not processed as secondary raw material.

1.5 Market price analysis for recyclable waste fractions

Good parts of materials that can be recycled after being used are designated for export to countries with high purchase and industry capacities, for such waste categories. Below are the purchase FOB prices for different categories of waste, in some countries with high recycling capacity. Comparing with our country, there is a noticeable difference in the purchase prices for goods as compared to countries such as USA, Germany, China and India

Table 13: International prices for purchasing of various categories of recyclable waste

Materials	Albania €/Mg	USA €/Mg	Germany €/Mg	China €/Mg	India €/Mg
Paper & Card (Class I)	44.5	70	90	72	140
Paper & Card (Class II)	74.3	115	120	90	165
Paper & Card (Class III)	89	170	160	135	200
Plastic HDPE & LDPE	250	320	330	250	327
Glass	-	270	200	220	213
Textiles	-	540	390	420	640
Metals-ferrous	171	283	160	237	260
Non-ferrous metals					
<i>Cooper</i>	3'864	5'326	6'522	6'320	5'642
<i>Aluminum</i>	892	1'600	1'350	1'790	2'007
<i>Bronze</i>	2'823	3'150	2'250	4'081	3'481
<i>Lead</i>	1'337	2'056	1'920	2'385	2'100
<i>Zinc</i>	594	2'442	1'890	2'890	2'534
Battery	840	1'120	1'035	1'437	1'230

In the national and international market, non-ferrous materials are those materials that are most required for recycling and have a higher market share and therefore market price compared to other recyclable materials. An important market value in terms of recycling and pricing, in and outside the country, show also batteries and various oil wastes. Although there are no accurate data, as it is reported from ARA, there are about 300 Mg/year of batteries that are either recycled or exported outside of the country.

1.6 Informal Sector

In many countries as well as in Albania, solid waste management is characterized by a complex problem in terms of collection and treatment. As mentioned in the previous chapter only around 65% of the population is covered with collection service. However, this service is provided only for the collection of waste, excluding the treatment or separation at source, whereas individuals or groups of individuals in an informal way are performing separate collection of recycling materials.

It is estimated that about 12,000 individuals mostly from Roma community earning their living from activities of collection and selling of recyclable waste from curbside containers, businesses and other resources. This sector also helps to protect natural resources and environment, by recovering up to 2% - 3% of the recyclable waste. Since the legislation in power has banned the



import of waste designated for recycling, the only source of recyclable materials for the industry of the country is provided by the network of informal pickers. Their integration into the formal collection system would generate various benefits, including:

- Social benefits through formalizing the informal sector;
 - Structured partnership as benefit for source separation of recyclables as benefit for waste avoidance, waste collection for the public service provider;
 - Partnership to achieve collection, recycling and recovery targets, leading towards cost minimization and affordable tariff structure – micro economic benefit
 - Further environmental benefits by potentially increasing the amount of recyclable waste;
 - Economic benefits through self-employment and better and safe working conditions;
-



2 Annexes

2.1 Annex 1: Detailed table for recyclable companies operating in Albania

No	Name of Company	Administrator Tel. & Email	Business address	Field of Activity	Market Value of completed investment	No. of employees	Installed Production Capacity	Capacity Currently Used	Annual Turnover 2015
1	Polipack	Jorgji Basho polypack_info@ yahoo.com Mobil: +355692090297	Prush/Tirana City	Recycling and Plastic Packaging Manufacturing	3 million €	30	400 Mg/month	≈ 30 %	
2	ELFA Recycle	Juni Kondi elton_meta@ya hoo.com Mobil: +355673004197	Beshiri Bridge Vaqarr/Tiran a City	Recycling PET	0.5 - 1 million €	10	1500 Mg/month	30%	
3	AGELS ALBANIA	Agim Sula info@gpr- albania.com Mobil: +355692047700	Gjokaj Village, Vore Tirana City	Plastic Recycling	3.7 million €	43	130 Mg/month	≈ 30-35 %	
4	GERI L.t.d	Sefedin Oshafi geri.shpk@yaho o.com Mobil: +355682022930	Kashar Highway, Km 12	Recycled and Producing Plastic	2 million €	62	300 Mg/month	35%	
5	Albplast L.t.d	Yusuf Gokdemir albplast@gmail. com Mobil: +355692061981	Former Metallurgy, Bldg .Metal Selection Elbasan City	Plastic Recycling, Plastic Arrays Manufacturing, Plastic	5 million €	46	400 Mg/month	40%	1.3 million €
6	Leter Plast Imeri	Ylli Imeri leter_plast@yah oo.com Mobil: +355676000084	Str. Berisha, Righ t Downhill, near Alba Vija, Kamez Albania	Recycle	1 million €	10	180 Mg/month	20%	
7	AME Ambient L.t.d	Alush Xhiani info@ameambi ent.al Mobil: +355692056870	Xhavzotaj, Shijak City	Plastic Recycling	1.2 million €	12	300 Mg/month	15%	
8	Restore Reduce Recycle Albania L.t.d	Iljaz Mehabeti info@r3albania. com Mobil: +355682044014	Area 5, Kavaja City	Collection, Selection, PET Recycling	1.3 million €	20	210 Mg/month	35%	0.72 million €
9	Istrefi L.t.d	Selim Istrefi istrefi_shpk@ya hoo.com Mobil:+3556820 33132	Porto Romano, Durrës City	Plastic Recycling	1.8 million €	18	300 Mg/month	30%	
10	EVEREST I.E L.t.d	Vullnet Haka info@everestie. com Mobil:+3556920 90854	Rr. 7 Nentori, Mezez Tirana City	Collection, Selection, Recycling of Plastic Waste	17 million €	130	1100 Mg/month	25%	≈ 3 million €
11	EDI Pack L.t.d	Bardhyl Balteza bbalteza@gmail	Porto Romano, Durrës City	Collection, Selection, Recycling	17 million €	107	2000 Mg/month	≈ 25- 30 %	3 million €



No	Name of Company	Administrator Tel. & Email	Business address	Field of Activity	Market Value of completed investment	No. of employees	Installed Production Capacity	Capacity Currently Used	Annual Turnover 2015
		.com Mobil: +355692026111		Cardboard					
12	KURUM International		Elbasan		110 million €	940	25.000 Mg/month	-	
13	Zodiac L.t.d	Reshat Mansaku zodiac@abcom.al Mobil: +355682024608	Salmone, Xhafzotaj	Collection, Selection, Colored Metal Recycling	10 million €	50	1000 Mg/month	40%	≈15 million €
14	AMA Recycle L.t.d	Rezart Zylfi amarecycling@gmail.com Mobil: +355692076767	Marikaj, Tirana City	Collection, Selection, Colored Metal Recycling	9 million €	45	800 Mg/month	40%	13 million €
15	ETNA Polimer L.t.d	Vullnet Haka info@etnapolimer.com Mobil:+355692090854	Km 22 Korçe-Bilisht Devoll ALBANIA	Collection, Selection, Recycling of Plastic Waste	3.2 million €	-	400 Mg/month	-	No activity since 2013 is missing the first material
16	Rametal L.t.d	Elman Abule info@rametal.al Mobil: +355694094944	Durrës-Tirane Highway, km 5 Filak	Collection, Selection, Colored Metal Recycling & Ingots Manufacturing	9 million €	45	2000 Mg/month	25%	5.2 million €
17	Albate L.t.d	Reshat Mansaku rmansaku@hotmail.com Mobil: +355682024608	Fllak, Xhafzotaj	Collection, Battery and bullet processing	3 million €	15	400 Mg/month	20%	
18	BrRecycling L.t.d	Sejdi Zere info@brecycle.al Mobil: +355682026313	Waste Management Field, Berat City	Collection, Plastic Processing, PET	3.5 million €	26	800 Mg/month	25%	
19	B.I.A.P. L.t.d	Sazan Piro info@biap.al pirosazan@gmail.com Mobil: +355692087090	Mucaj, Vore City	Collection, Waste Selection & Manufacturing of Plastic pipes	5 million €	40	1100 Mg/month	20%	
20	Floro Plast L.t.d	Petrit Lika floarplast_al@yahoo.com Mobail: +355696260181	Mbrostar Bridge, Fier City	Recycling & Manufacturing of Plastic Coffers	0.5 million €	7	80 Mg/month	20%	
21	Invemet Albania	Ferdinand Luca albania@invemet.com Mobile: +355692027099	Lezhe-Milot Highway km. 7	Collection, electronic scrap processing & catalyst, used vehicle parts	0.3 million €	6	300 Mg/month	1%	
22	FrutiBest L.t.d	Artan Habili frutibest@yahoo.com Mobil: +355682071277	Metallurgy, Elbasan City	Recycling, Manufacture of plastic tubes	2.5 million €	18	250 Mg/month	50%	
23	Tevi Plast L.t.d	Evis Gjata gjata.el@hotmail.com	Metallurgy, Elbasan City	Plastic Recycling	1.3 million €	30	200 Mg/month	30%	



No	Name of Company	Administrator Tel. & Email	Business address	Field of Activity	Market Value of completed investment	No. of employees	Installed Production Capacity	Capacity Currently Used	Annual Turnover 2015
		Mobil: +355682097888							
24	Queen Park L.t.d	Ilir Abedini queen.park@hotmail.com Mobil: +355682021023	Former henery, Laprake, Tirana City	Collection, Selection, Plastic Recycling	1.2 million €	12	300 Mg/month	60%	0.7 milion €
25	Serinçay L.t.d	Shpetim Bica bicashpetim@hotmail.com Mobil: +355692073481	5 Maji Area, former mall store, Elbasan City	Recycled Plastic Waste (PET)	2.5 million €	20	750 Mg/month	30%	
26	BrRecycle L.t.d (Pelet)	Sejdin Zere info@brecycle.al Mobil: +355682026313	Former industrial area, Librazhd City	Wood Pellet Manufacturing	2 million €	16	1000 Mg/month	30%	
27	11 Wood Processing Companies all over the country	Accurate data is being updated	All over the country	Wood Manufacturing	≈12 million €	≈300	≈ 8000 Mg/month	10%	
28	I.B Recycling	Fatbardh Meca info@ibrecycling.al Mobile: +355692083538	Bisht Kamez, Fllak-Durres City	Recycling of electrical waste, electronic and catalytic residues	5.2 million €	15	300 Mg/month	25%	
					Total: 234.2	Total: 2.073	Total: 49.540	Average: 26.82%	



2.2 Annex 2: Table of recycling companies that have an Environmental Permit to operate

	Company Name	Activity	Adress
1.	RAMETAL	Recycled colored metal	Tirana – Durrës Highway Shënavlash Village
2.	ZODIAC	Colored metal collection, recycling and aluminum processing. Recycled colored metal	Kashar -Tirana
3.	GENERAL POLYMEREN	Plastic and polyethylene recycling	Gjokaj Village, Vora
4.	KLAUDOR	Plastic and polyethylene recycling	Tirana
5.	GERI	Plastic Recycling	Tirana – Durrës Highway
6.	SPG Celik Ins. San. Ve Tic. L.t.d	Waste currents: paper, cardboard, plastics, aluminum	Tirana
7.	Medi - Tel L.t.d	Hospital waste treatment center	Tirana
8.	POLYECO ALBANIA L.t.d	Conveyance and transport of all types of industrial waste, including hazardous waste	Tirana
9.	Institute of Bio-Technological Research	Collection of used oils and transporting them to licensed companies for processing and recycling purposes	Tirana
10.	B.I.A.P. L.t.d	Collection, separation and waiting for waste streams: paper, cardboard, wood, plastics. Plastic Recycling.	Tirana
11.	KU & KO L.t.d	Demolition of metal structures, collection, selection, processing of scrap and colored metals	Tirana
12.	EVEREST I.E. L.t.d	Manufacture of plastic materials and plastic recycling. Collection, transport, storage, recycling, processing of plastic waste.	Tirana
13.	ANSA L.t.d	Collection, cleaning, processing, regeneration of plastic materials, production of plastic pipes; Waste collection, plastics, paper, paperboard, wood, glass, iron, other metals; Cleaning and processing of urban waste.	Tirana
14.	AMA RECYCLING L.t.d	Colored metal recycling, recycling and aluminum processing.	Tiranë
15.	EKSSI	Plastic and polyethylene recycling.	Komuna Helmes, Kavajë
16.	SCHOLZ Albania	Scrap processing	Xhafzotaj, Durrës
17.	EDIPACK	Recycle paper and cardboard	Porto Romano, Durrës
18.	SOMET	Recycling batteries and accumulators.	Durres
19.	Porti Detar	Used oil recycling	Durres
20.	Albania Bitumi L.t.d	Lubricating oil recovery.	Durres
21.	COLI L.t.d	Removing solid wastes and oils from ships.	Durres
22.	PASTRIMI DETAR Sh.a.	Collection, processing and recycling of port waste by ships	Durres



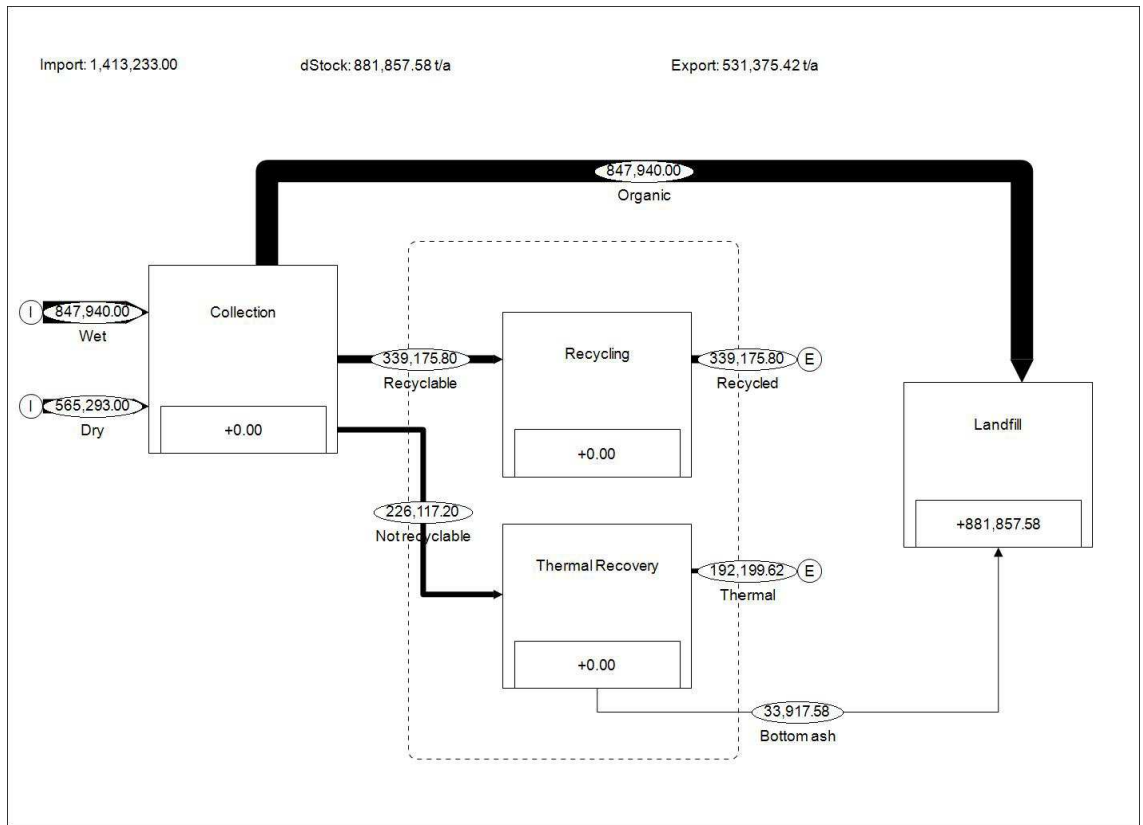
	Company Name	Activity	Adress
23.	KURUM INTERNATIONAL Sh.a.	Scrap Transit Collection.	Durres
24.	ZODIAC L.t.d	Collection, processing, recycling, aluminum melting, production of aluminum foil used.	Durres
25.	DAWA INTERNATIONAL TRADE L.t.d	Collection and processing of plastic waste	Durres
26.	LA VITORIA L.t.d	Depolymerization and recycling of used tires.	Durres
27.	SHIJAKU L.t.d	Scrap collection and trading.	Durres
28.	ALBAT RECYCLING L.t.d	Collection, recycling and melting of batteries for lead production	Durres
29.	KURUM	Scrap Recycling.	Elbasan
30.	GDS L.t.d	Separation and packaging of urban waste.	Elbasan
31.	DRITAN ELEZI	Place for storage inert waste.	Elbasan
32.	GOLD PLUS L.t.d	Scrap collection point.	Elbasan
33.	Larti L.t.d	Collection, processing and recycling scrap.	Elbasan
34.	IMPULS - 95 L.t.d	Recycled rubber and lubricating oil production.	Elbasan
35.	B- RECYCLING	Plastic and polyethylene recycling.	Olltak , Berat
36.	EGLAND-B	Plastic and polyethylene recycling.	Shupenzë, Dibër
37.	PLASTIKA ALBANIA	Plastic Recycling.	Vrion, Saranda, Gjirokastra
38.	VALE RECYCLING	Plastic, polyethylene and paper recycling.	Laç, Lezha
39.	Ylberi L.t.d	Scrap collection point.	Lezha
40.	IRIDIANI & KADELI L.t.d	Removing oil and solid waste from ships.	Lezha
41.	AMA-Oil	Recycling used lubricating oils and petroleum products.	Lushnje. Fier
42.	Recolight L.t.d	Recycling of urban waste for recycling purposes.	Fier
43.	TOT - TRADING IN OIL & TRANSPORT	Waste recycling plant.	Fier
44.	ABA 2011 L.t.d	Recyclable urban waste management and urban waste disposal site for the city of Fier.	Fier
45.	PIU - ECO L.t.d	Scrap collection and processing.	Fier
46.	Finikas L.t.d	Port waste cleaning and environmental management.	Vlora
47.	M.P.P.T.T	Construction and operation of Himara's urban solid waste transfer station.	Vlora
48.	Riab Vjosa L.t.d	Port waste cleaning and environmental management.	Vlora
49.	Vlora harbour waste	Port cleaning	Vlora
50.	Delfini 1 L.t.d	Port clearance from solid wastes and petroleum wastes.	Vlora
51.	ALPIDA L.t.d	Collection and removal of solid, liquid and petroleum wastes from ships in the port of Vlora.	Vlora



	Company Name	Activity	Adress
52.	Etna Polimer L.t.d	Collection, processing and recycling of plastic waste.	Korça
53.	KRIKET - 1 L.t.d	Urban waste collection, separation, fractionation and packaging of waste.	Korça
54.	KRWM Sh.a.	Maliq landfill & waste separation.	Korça (Still not functional)
55.	KU & KO L.t.d	Demolition of metal structures, assembly, separation, processing of scrap and colored metals.	Kukës
56.	Becker Albania	Bushat landfill & waste separation	Shkodra
57.	PRENG TOMA	Landfill for urban waste for the Rrëshen and Rubik cities & waste separation.	Shkodër



2.3 Annex 3: Material flow diagramme





The European Union's IPA Programme for Albania



A project implemented by **EPTISA Servicios de Ingeniería S.L.** (Spain)
Emilio Muñoz, 35-37 – 28037 Madrid
Tel.: +34 915 949 500
Fax: +34 914 465 546



This project is financed by the European Union
ABA Business Centre; Rr. Papa Gjon Pali II; 1001 Tirana; Albania