



TAKING
COOPERATION
FORWARD

-  European Week of Regions and Cities/ 15th OCTOBER 2020
-  Pilot project - Piloting circular solution in the domain of waste management and reuse in Varaždin, Croatia
-  CE1515/ CITYCIRCLE / DAN / Nikolina Žigmund / Croteh Ltd./ Prof.dr.sc. Gregor Drago Zupančič



PILOT: „BIOECONOMY IN VARAŽDIN”

- The pilot project will represent a valuable blueprint for policymakers to stimulate the progression from a linear towards CE.
- HOW WE ARE DOING THIS?





PILOT: BIOECONOMY IN VARAŽDIN

MILESTONES:

- ✔ Pilot project concept confirmed
- ✔ Procurement and strategic placement of waste bins - completed
- ✔ Successful separation of waste - ongoing
- ☀ Production of high quality digestate
- ☀ Utilization of the digestate on the 5 years old hazelnut farm
- ☀ Successful harvest of hazelnuts





THE MAIN PILOT STAKEHOLDERS:

1. *Gradska tržnica Ltd.* - Open city market company





THE MAIN PILOT STAKEHOLDERS:

2. Čistoća Ltd. - Waste management company





THE MAIN PILOT STAKEHOLDERS:

3. *Family farm Vrček* - biogas plant



 **OPG VRČEK**





THE MAIN PILOT STAKEHOLDERS:

4. *Development Agency North - DAN Ltd.*
5. *City Municipality of Varaždin*
6. *Croteh Ltd.*
7. Partners from scientific community



PROGRESS BY THE PILOT ACTIVITIES:

1. PROJECT MANAGEMENT

1.1. MEETINGS

- ✔ Several meetings where held with relevant stakeholders



1.2. PUBLIC PROCUREMENT

- ✔ 83 bins were procured



PROGRESS BY THE PILOT ACTIVITIES:

2. PROJECT IMPLEMENTATION

2.1. DETERMINATION OF QUANTITY AND COMPOSITION OF CITY MARKET WASTE

- ✓ Prior determination of quantity and composition is completed
- ✓ Established monitoring system after the using sorting bins

Responsible for this activity: Gradska tržnica Ltd., Čistoća Ltd. and Croteh Ltd.

2.2. STRATEGICAL PLACEMENT OF WASTE BINS



PROGRESS BY THE PILOT ACTIVITIES:

2.3. SEPARATION, COLLECTION AND TREATMENT OF WASTE

Čistoća Ltd. will transport the collected biodegradable waste for treatment in the biogas plant *OPG (Family farm) Vrček*. The produced digestate will then be transported to the hazelnut farm.

Responsible: tenants, public society, *Gradska tržnica Ltd.*, *Čistoća Ltd.*, *OPG Vrček*.

2.4. SOIL AND DIGESTATE SAMPLING AND ANALYSIS AND APPLICATION OF DIGESTATE ON FARMLAND

Sampling of soil from hazelnut farm and digestate from the biogas plant and their analysis are taken.

2.5. HAZELNUT HARVESTING

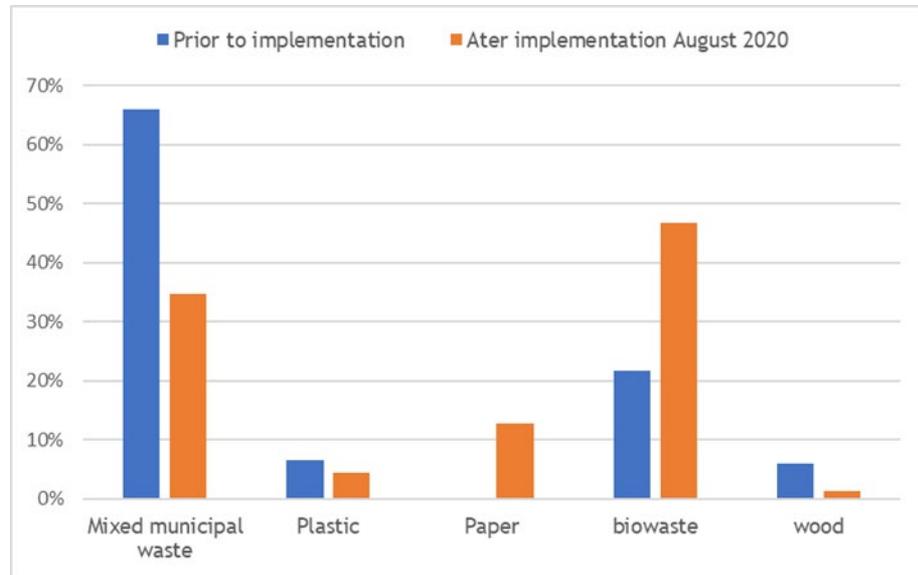
Responsible for this activity: *Gradska tržnica Ltd.*



PROGRESS : PARTIAL RESULTS

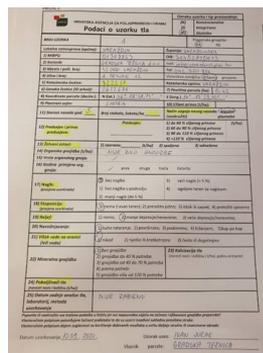
ACTIVITY 2.3.

	Prior to implementation	Ater implementation August 2020
Mixed municipal waste	65,94%	34,7%
Plastic	6,50%	4,4%
Paper	0	12,7%
Biowaste	21,67%	46,8%
Wood	5,89%	1,4%



ACTIVITY 2.4.

 Soil analysis in progress



PROGRESS BY THE PILOT ACTIVITIES:

3. PROJECT COMMUNICATION

3.1. DESIGN OF PROMOTIONAL MATERIALS AND EDUCATION

- ✔ Promotional notice for 83 beneficiaries (small shops within open local market) were prepared and distributed
- ✔ Labels with logos for sorting bins were created and printed
- ✔ Media press release was organized while delivering bins



PROGRESS BY THE PILOT ACTIVITIES:

3.2. EDUCATIONAL ACTIVITY

Educational materials on proper waste sorting

RAZDVOJI OTPAD U ODGOVARAJUĆE SPREMNIKE!

PLASTIKA	BIOOTPAD	PAPIR I KARTON	STAKLO
 <ul style="list-style-type: none">✓ Čista i prazna plastična ambalaža (bure od janting ulja, ulja, uljigra, voća, sokova, konzerva, dehidriranog povrća, jedvastružne pševke za kašičicu i šerpanje...)✓ Plastične vrećice i folije, tetrapak i ostala višestruko upotrebljiva ambalaža✓ Ambalažni otpad	 <ul style="list-style-type: none">✓ Kuhinjski otpad od pripremanja hrane i ostali hrane (ostaci krompira i povrća, šerpanje, križak od kave, smeće od čaja, ostaci kruha, listovi salate, šljive, kečup i sl.)✓ Vrtne ostaci otpad (svježe cvjetnje, otpadne šilje, trave, šelva i sl.)✓ Iskoristivane gospodarske otpadne	 <ul style="list-style-type: none">✓ Novine, časopisi, programeri, katalozi✓ Bilježnice, križaljke, telefonske imenice, albume✓ Ploče i fotokopirani papiri, pismo, uređivači teksta, gospodarske otpadne✓ Maše, kartonski šerpanji, vatrozvučnici (šerpanje, kartonske kutije (bez šerpanja izlije, plastike, aluminija i sl.))	 <ul style="list-style-type: none">✓ Čista i prazna staklena ambalaža✓ Čista staklena i bosa bez dugmeta i gruboćica (od stila, namesta, zime...)
<ul style="list-style-type: none">✗ Plastična ambalaža od štetah hrani (janting, bura, kečup, staklo...)✗ Ambalaža od motornih ulja i maziva, plastični križaljke	<ul style="list-style-type: none">✗ Mesu, riba, kečup i kafa✗ Ulja i masti✗ Ambalaža hrane (kartonska, staklena, plastična...)✗ Ostaci otpad✗ Opušci od cigareta✗ Otpadni otpad s frigidirima distribucije	<ul style="list-style-type: none">✗ Irdugo papir, ugljeni papir, fotografije i fotografirani papiri✗ Ulijevi i prijetni papiri, gumovane vrtkine, pelene i sl.✗ Iskoristivane gospodarske otpadne	<ul style="list-style-type: none">✗ Staklo za prozore, automatski staklo, kuhinjske i sapunice staklo, amoniacna stakla, staklene vane✗ Šerpanje i fluorovodnjače vane✗ Pevstakleni i keramični predmeti
✓ ODLAŽE SE	✗ NE ODLAŽE SE		

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PROGRESS BY THE PILOT ACTIVITIES:

☀ Education about the use of digestate and hazelnut fertilization will be provided in the future period.

Responsible for this activity: Croteh Ltd. with other partners from scientific community

3.3. WRITTEN REPORTS

☀ During the duration of the project, every six months a report about the current status and accomplished goals will be delivered.

Responsible for this activity: Croteh Ltd., DAN and CMV



THANK YOU FOR YOUR ATTENTION



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CITYCIRCLE



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