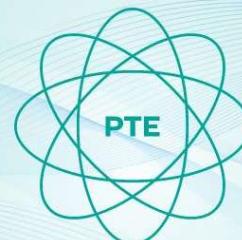


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Polskie Towarzystwo Elektroradiologii

An analysis of current knowledge on circular economy in
radiotherapy: informing the curriculum – **preliminary results**

Ana Luísa Soares

Medical Physics Service, Portuguese Oncology Institute of Porto, Porto, Portugal
Faculty of Biology, University of Vigo, Spain



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POZNAN, 26-27 LISTOPADA 2021
MIEJSCE: CONCORDIA DESIGN



Co-funded by the
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Disclaimer

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Content

- **Background**

- Climate changes / Global warming
- Circular economy

- **Education and training**

- Importance and demand
- Green skills

- **Survey**

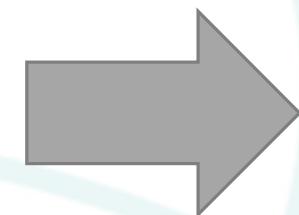
- Literature review
- Design
- Methods
- Preliminary results



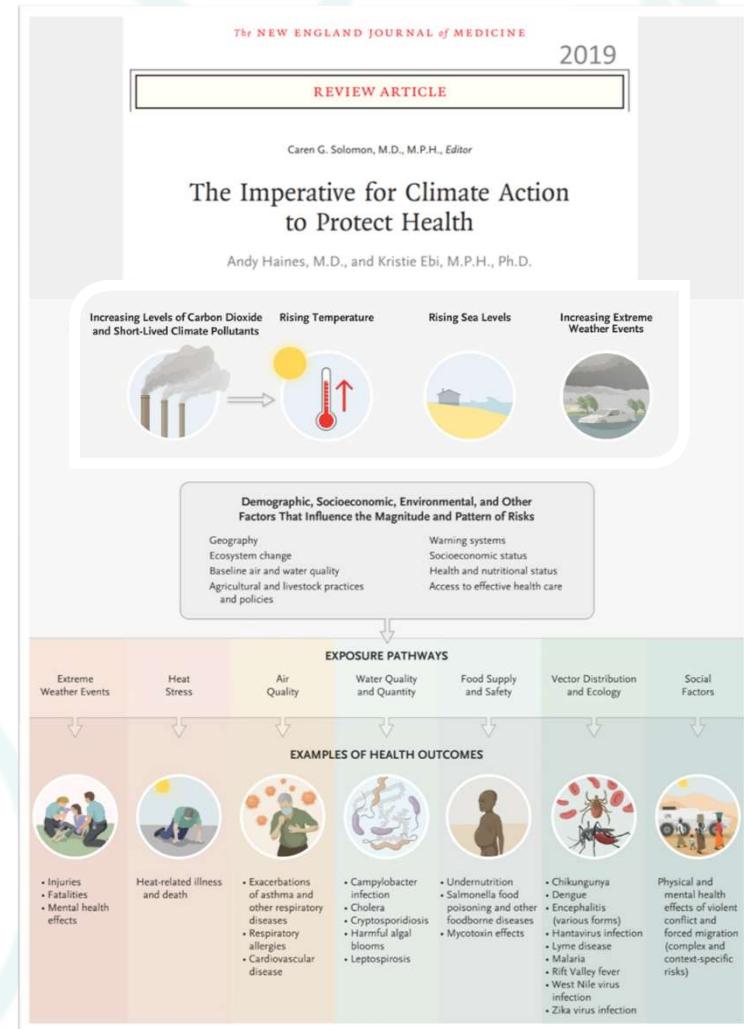
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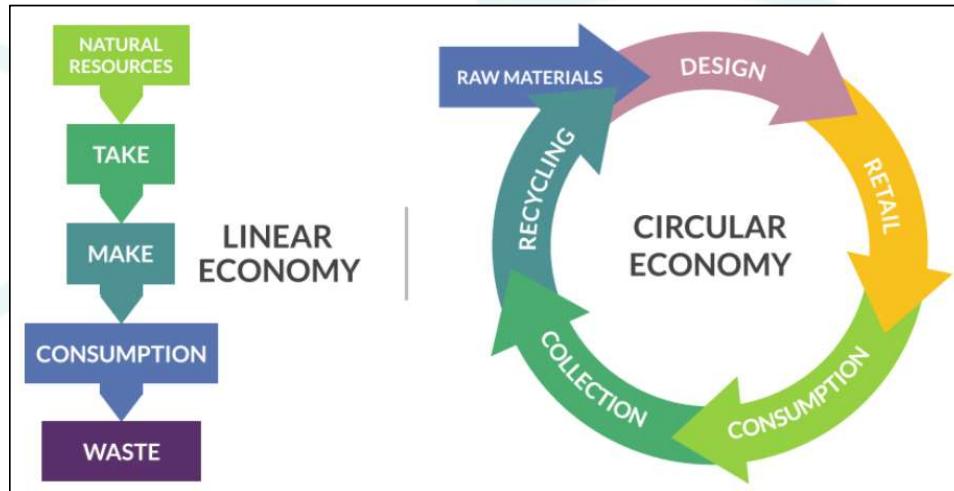
Climate changes
Global warming



What we already know?



Circular economy – CE



- ✓ Linear economy: take-make-use-dispose
- ✓ Circular economy: the waste is used as a resource and we minimise waste by the re-introducing it into the system.
- ✓ CE aims to maintain the value of resources in the economy for as long as possible

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Education and training Importance and Demand Green skills

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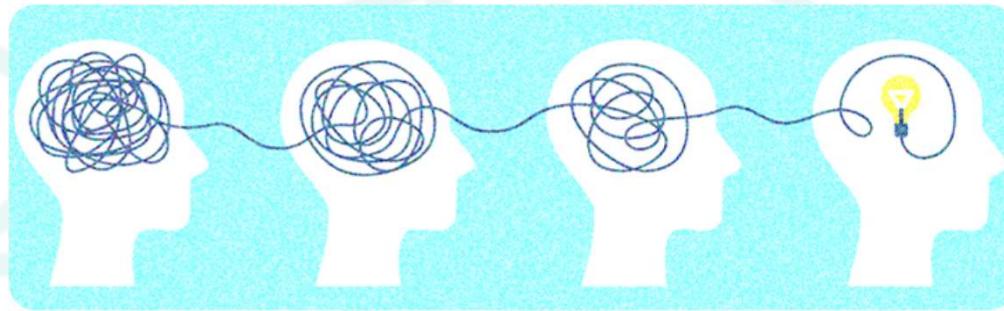
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The role of TR/RTTs in healthcare sustainability



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Education and training – Green Skills

What are green skills?

“the knowledge, abilities, values and attitudes needed to live in, develop and support a sustainable and resource-efficient society”.

OECD/Cedefop 2014



“Green skills and competences should be understood as those skills which society and the economy need in relation to the environment.”

European Economic and Social Committee, 2020

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Education and training

European Economic and Social Committee
Towards and EU strategy
for enhancing green skills
and competences for all

European Commission
European Skills Agenda



Green Jobs:
Towards decent work in a sustainable, low-carbon world

UNEP
Green Jobs

2008

2010

2011

2014

2016

2019

2020



Programmes to promote environmental skills
Final Report

Green Employment Skills Assessment
Background: This study and its conclusions and recommendations is intended to support the European Commission or the other European institutions and agencies in their work on the development of the green economy and to help them to take the necessary actions.

ECORYS Note(EN)

Greening Jobs and Skills
LABOUR MARKET IMPLICATIONS OF ADDRESSING CLIMATE CHANGE

Cristina Barrios Paredes, Carlos Jiménez and Matilde Muñoz

Bordón, 29 June 2010

LEED

ECORYS
Programmes to promote environmental skills
OECD
Greening jobs and skills



Publication Office of the European Union
An Agenda for new skills and jobs



European Commision
A new skills Agenda for Europe



European Commision
Green employment initiative: Tapping into the job creation potential of the green economy

Literature review

Aim:

To investigate the importance and applicability of circular economy in healthcare and RT as well as the relevant aspects to include in radiographer's education.

METHODS Systematic search

Databases



Other sources:



QUERY: ("circular economy" OR "carbon footprint" OR "greenhouse emission" OR ecology OR "green skill") AND (skill OR role OR task OR training OR education OR job OR competence OR scope) AND (radiographer OR ((radiology OR radiograph OR diagnostic OR radiation) AND (technologist OR technician OR therapist)) OR Radiotherapist OR RTT OR "healthcare professional"))

SURVEY



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art
Associação Portuguesa de Radioterapeutas



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Polskie Towarzystwo Elektrodiagnostyki

An analysis of current knowledge on circular economy in RT: informing the curriculum

Aim:

Evaluate the perceptions of TR/RTT regarding circular economy practices relevant to the professional practice across the EU and

Identify the relevant green skills for these professionals.



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Survey design

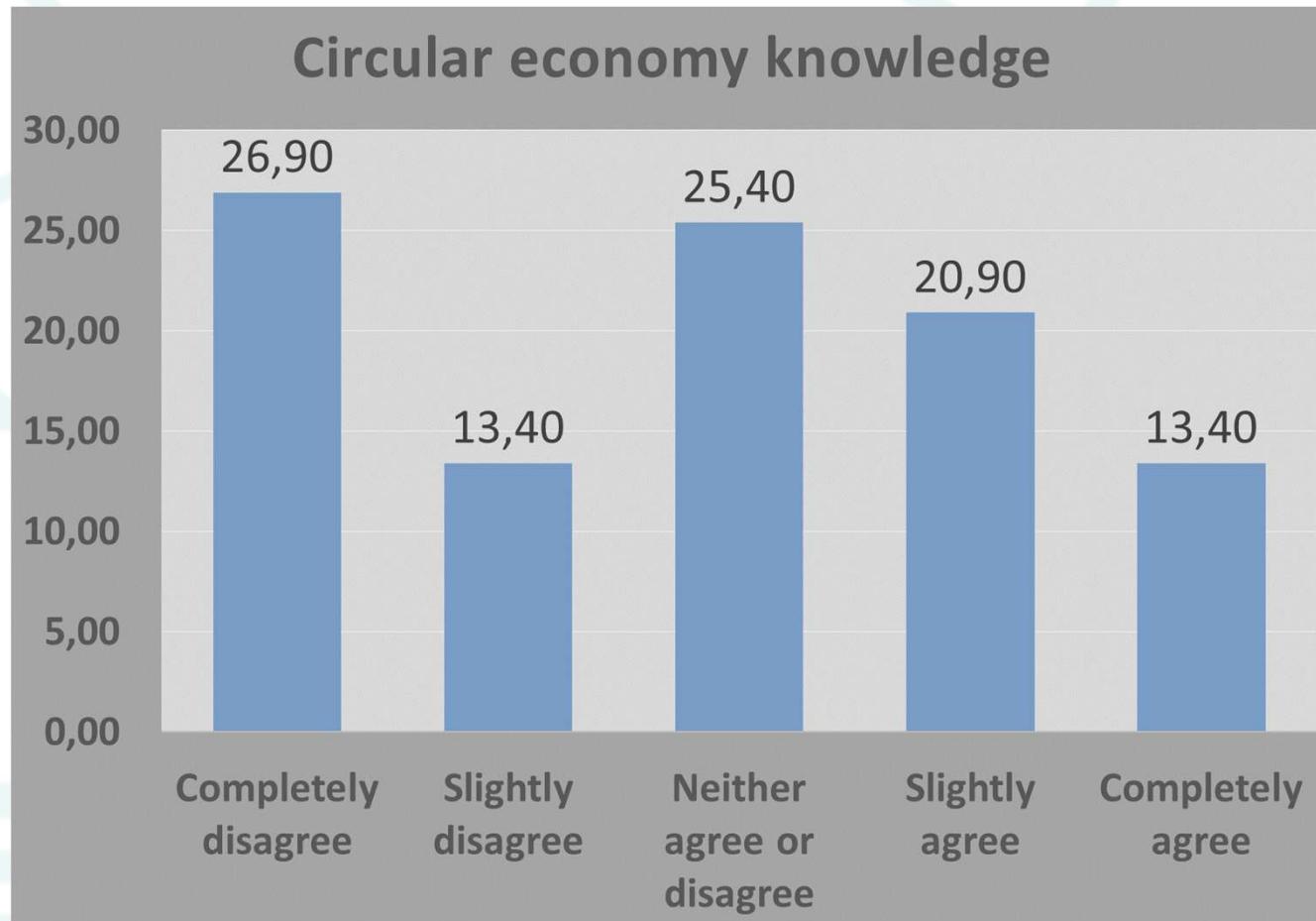


An analysis of current knowledge on circular economy in RT: informing the curriculum

Sections

- Section I – Socio-demographic evaluation
- Section II – GS – Knowledge
- Section III – GS – Personal/Individual attitudes
- Section IV – GS – TR/RTTs attitudes within the working environment / Professional group attitudes
- Section V – GS – Perception of the importance of CE
- Section VI – Green management and TR/RTTs engagement in CE improvements at hospital
- Section VII – TR/RTTs perception regarding educational needs

Survey – Preliminary results



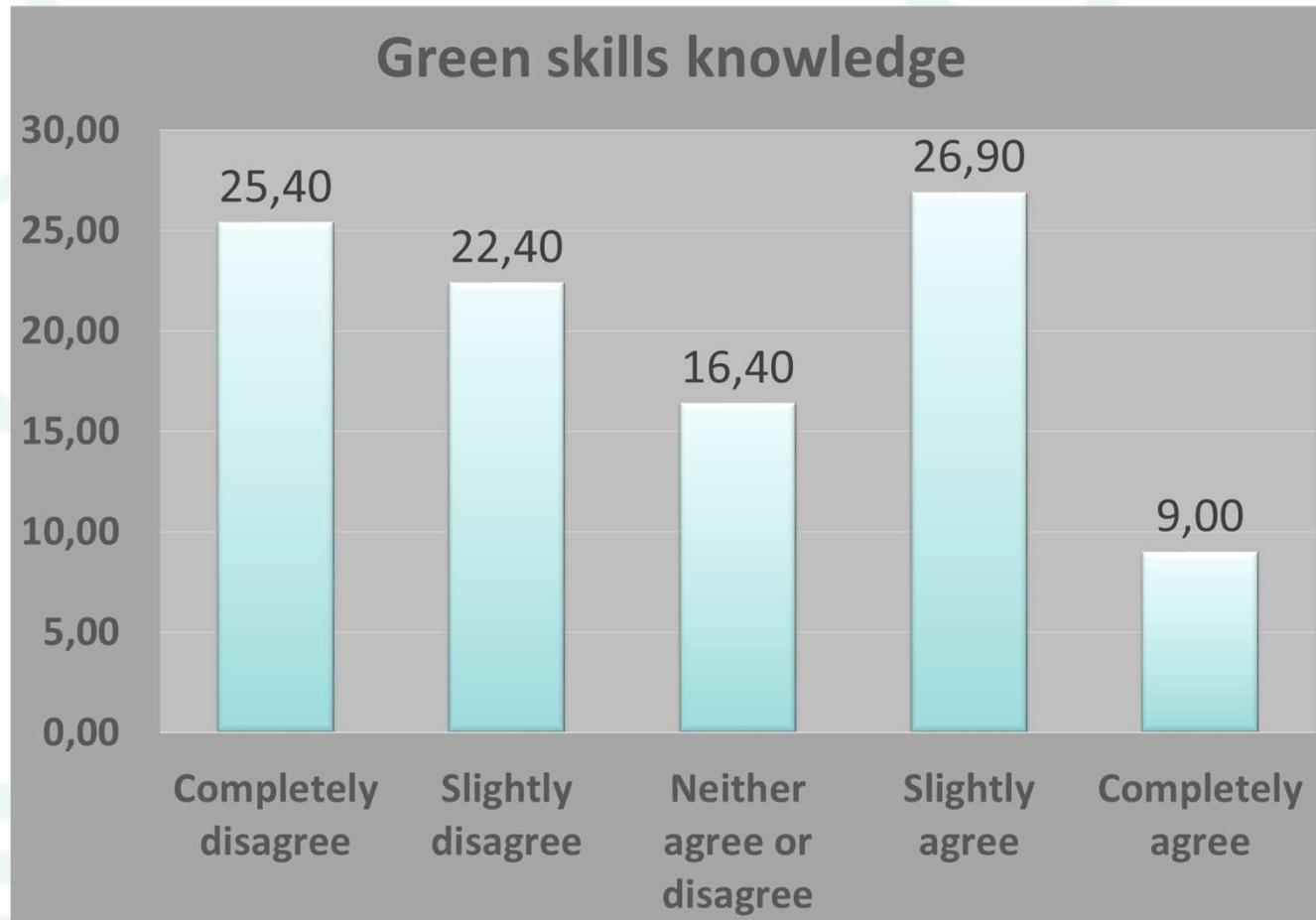
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Survey – Preliminary results



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Survey – Preliminary results

		Knowledge	
		Circular economy	Green skills
Socio-demographic	Country where obtained the academic level	0.245*	0.403*
	Currently working country	0.176*	0.332*
	Area/specialism included in educational training	0.555*	0.730*

* p-value results from qui-square test.

Knowledge in CE or green skills is not related with the country where TR/RTTs obtained the academic level or with the working country, neither with the area of specialism

Survey – Preliminary results

Socio-demographic	Currently working country	Knowledge
		Awareness regarding circular economy (CE) national policies 0.020*

* p-value results from qui-square test.

Awareness regarding CE national policies are related with the TR/RTTs working country



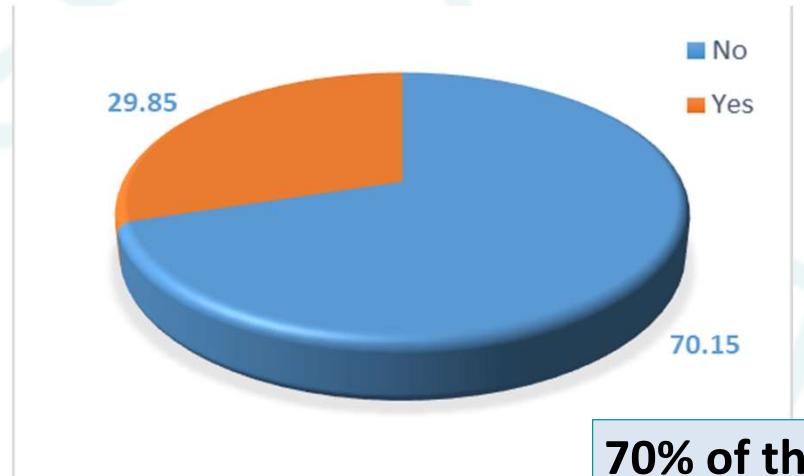
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Survey – Preliminary results

Education and training in CE practices

waste management, recycling, reduction of materials consumption or about the different types of waste...



70% of the TR/RTTs did not received education/training in CE practices

Survey – Preliminary results

Socio-demographic	Currently working country	Knowledge If received: timing of education in circular economy (CE) practices	0.011*
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* p-value results from qui-square test.

Timing of education in CE practices is related with the TR/RTTs working country

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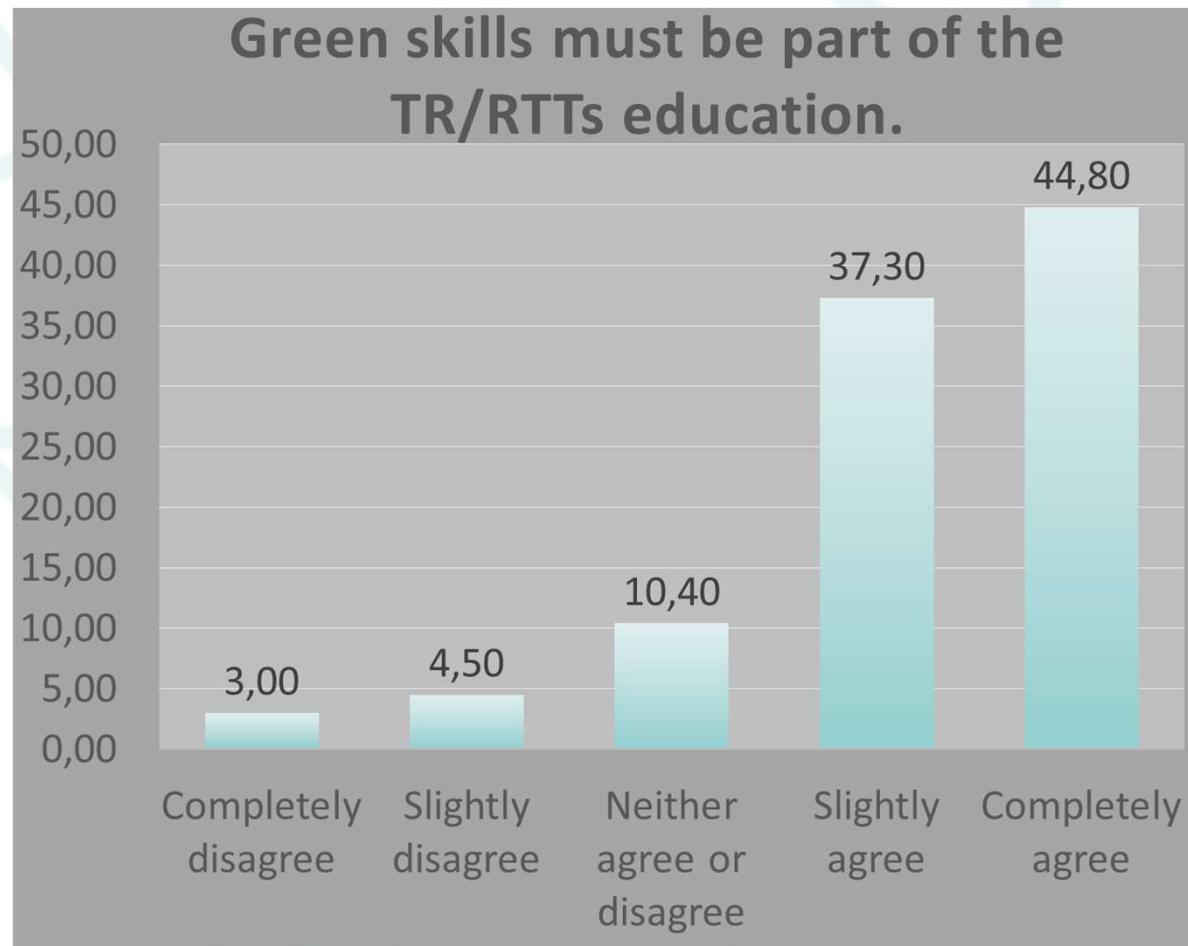


Survey – Preliminary results

	Currently working country										Total
	Finland	France	Greece	Ireland	Latvia	Malta	Norway	Poland	Portugal	United Kingdom	
Q20 Undergraduate	Contagem	0	1	0	0	0	0	0	0	0	3
	% em Q20	0,0%	33,3%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%
	% em Q5	0,0%	100,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	15,0%
Postgraduate	Contagem	1	0	1	2	0	0	1	1	6	15
	% em Q20	6,7%	0,0%	6,7%	13,3%	0,0%	0,0%	6,7%	6,7%	40,0%	100,0%
	% em Q5	100,0%	0,0%	100,0%	100,0%	0,0%	0,0%	100,0%	50,0%	100,0%	75,0%
During employment	Contagem	0	0	0	0	1	0	0	1	0	2
	% em Q20	0,0%	0,0%	0,0%	0,0%	50,0%	0,0%	0,0%	50,0%	0,0%	100,0%
	% em Q5	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	50,0%	0,0%	10,0%
Total	Contagem	1	1	1	2	1	2	1	2	6	20
	% em Q20	5,0%	5,0%	5,0%	10,0%	5,0%	10,0%	5,0%	10,0%	30,0%	15,0%
	% em Q5	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

**Undergraduate – Malta
Postgraduate – Portugal
On the job training – Poland, Latvia**

Survey – Preliminary results



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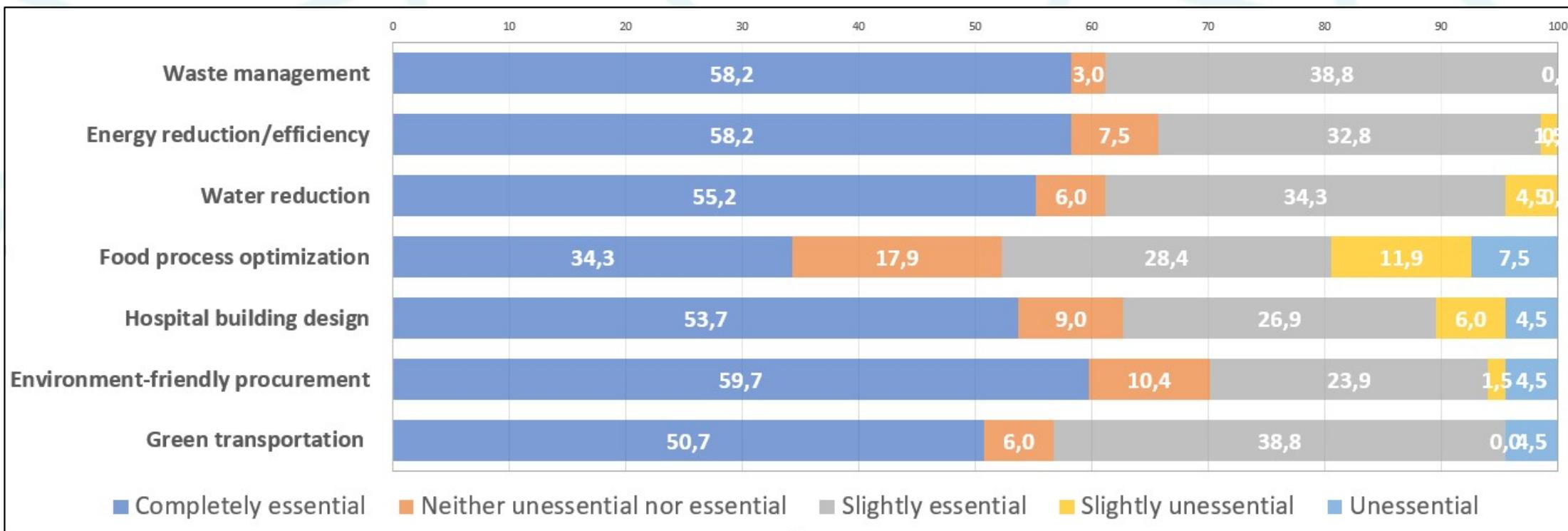
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Survey – Preliminary results

Essential topics to be developed by TR/RTTs





Final remarks

- TR/RTTs have a lack of knowledge regarding circular economy and green skills
- This knowledge is not related with the country where TR/RTTs obtained the academic level or with the working country, neither with the area of speciality
- 70% of the TR/RTTs did not have education or training in CE practices
- 82% state that green skills must be part of TR/RTTs education
- Educational needs: topics on environment-friendly procurement, waste management and energy reduction/efficiency

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Final remarks



Thank you for your
attention!

An analysis of current knowledge on circular economy in radiotherapy: informing the curriculum

https://forms.office.com/Pages/ResponsePage.aspx?id=CEbIIh3wxUaAJGPMli5fUT6RLUPnYAJJuy_oGn6_a1IUQkMyRFFXOFJGV01RV0VHMTZaSORGUzJQVY4u

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