IAEA 60 Years
Atoms for Peace and Development

IMPACT EVALUATION OF IAEA'S POSTGRADUATE EDUCATIONAL COURSE IN RADIATION PROTECTION AND THE SAFETY OF RADIATION SOURCES

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Outline

Overview of the PGEC

- *Objectives, Syllabus, Hosting organizations*
- *Blended Learning approach, Assessment and Evaluation mechanisms*

Results of the impact evaluation

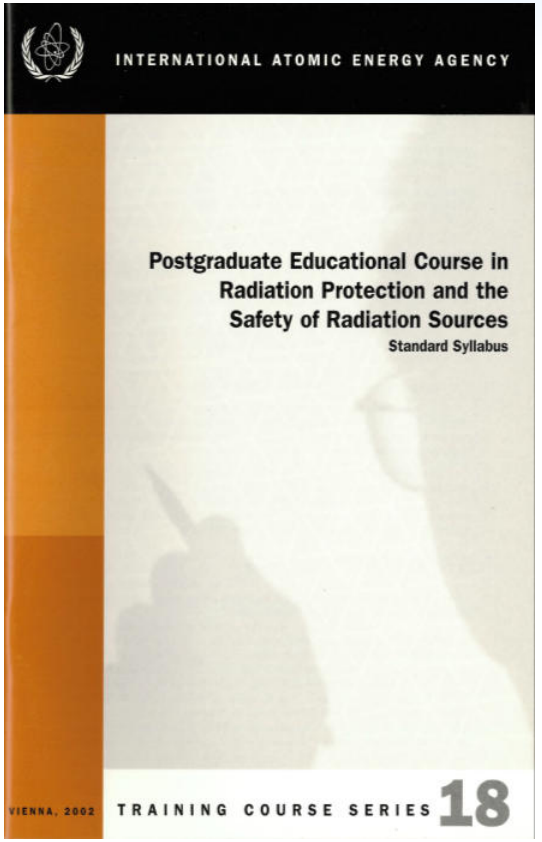
- *Participants' professional development (individual level);*
- *Utilization of knowledge and skills towards strengthening radiation safety infrastructures (organizational and/or national level)*

Conclusions

Overview of the PGEC

Course objectives

- To meet the needs of professionals at graduate level, or the equivalent, to acquire a sound basis in radiation protection and the safety of radiation sources, and;
- To provide the necessary basic tools for those who will become trainers in radiation protection and the safe use of radiation sources in their countries.
- Syllabus published as Training Series no.18 (pending to be published)

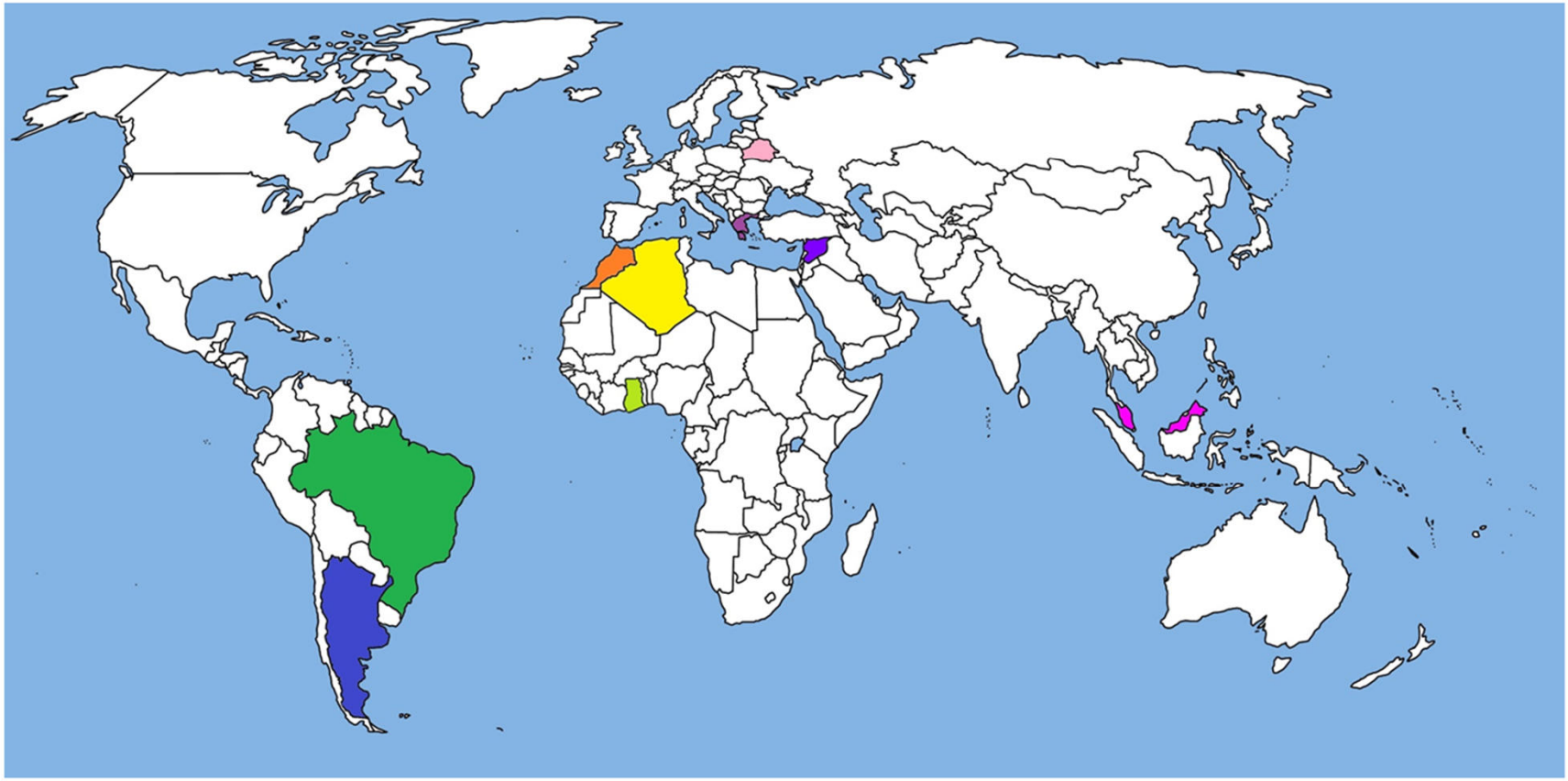


Overview of the PGEC

- 12 parts with a modular structure
- Duration: 5,5 months
- Syllabus based on the IAEA Safety Standards
- Delivered in English, Arabic, French, Russian, Portuguese and Spanish

Overview of the PGEC

- Regularly delivered in nine different Regional Training Centres (RTCs)
- Argentina, Algeria, Belarus, Brazil, Ghana, Greece, Malaysia, Morocco and Syria



Overview of the PGEC

PGEC is structured with ***Activities*** including:

- **didactical activities**
  - lectures, practical exercises (laboratory exercises, demonstrations, technical visits, case- and self-studies), work project

- **assessment activities**
  - a structured activity by which the competencies of an individual are measured. Assessment is often conducted at the end of a training session to determine the extent to which trainees have met the learning objectives

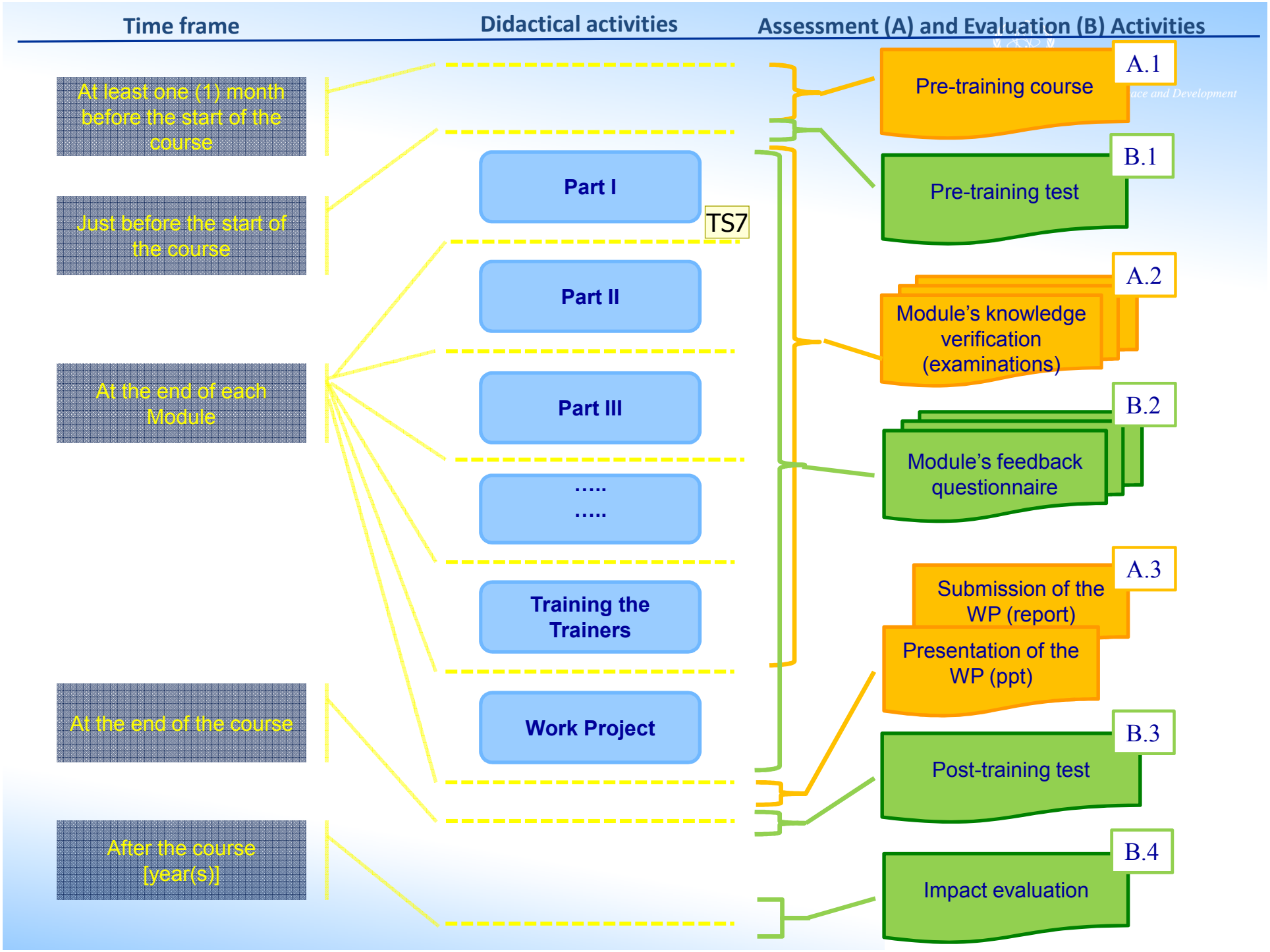
- **evaluation activities**
  - a series of activities used to measure the adequacy and effectiveness of a training session, or course

PGEC is delivered employing a ***Blended learning (BL)*** approach including

- a **traditional classroom component**

  coupled with

- **distance learning components** (typically e-learning)


Time frame
Didactical activities
Assessment (A) and Evaluation (B) Activities
At least one (1) month before the start of the course
Just before the start of the course
At the end of each Module
At the end of the course
After the course [year(s)]
Part I
TS7
Part II
Part III
…..
…..
Training the Trainers
Work Project
A.1
Pre-training course
B.1
Pre-training test
A.2
Module's knowledge verification (examinations)
B.2
Module's feedback questionnaire
A.3
Submission of the WP (report)
Presentation of the WP (ppt)
B.3
Post-training test
B.4
Impact evaluation

Slide 7

TS7 Changed from Module to Part, spelled out TTT and WP.
Changed background color for better visibility, like in the one you used for the TC reports.
TICEVIC, Sabina; 09.05.2017

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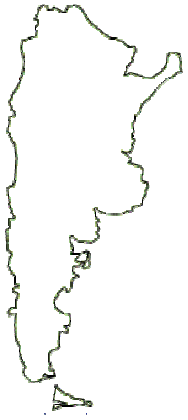
90
COURSES TOTAL

PARTICIPANTS TOTAL **+1600**

110 MEMBER STATES

FIRST PGEC
35 YEARS AGO IN ARGENTINA



As of 2016

Outline

Overview of the PGEC

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- *Blended Learning approach, Assessment and Evaluation mechanisms*

Results of the impact evaluation

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Conclusions

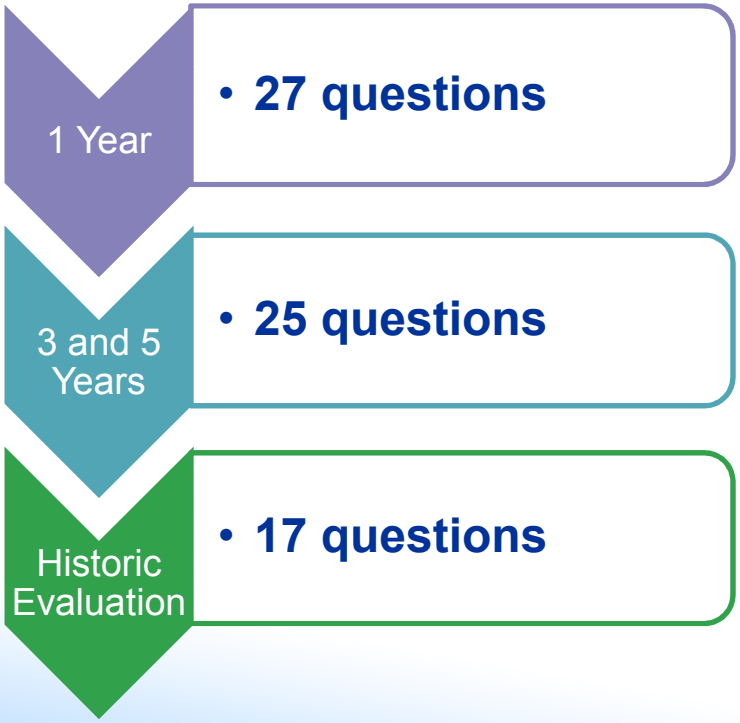
Evaluation methodology

Objective of the impact evaluation

To provide information, through collection of data based on self-assessment, to what degree the course has an impact on:

- Participants' professional development *(individual level)*; and
- Utilization of knowledge and skills towards strengthening radiation safety infrastructures (*organizational and/or national level*).

Three Impact questionnaires



MULTILINGUAL QUESTIONNAIRE

IAEA e-learning platform CLP4NET

Evaluation methodology

Impact questionnaires (structure)

Professional development

Indicate your field of work immediately **before** attending the PGEC, and your **current** field of work

	Industrial (radiography, irradiatior facilities, well-logging,NORM)	Medical	Nuclear (NPP, research reactor, fuel cycle facility, waste management, isotope production, uranium mining)	Research/Academic	Regulatory Authority	Service Provision (training, dosimetry, calibration)	Agriculture
Field of work before PGEC	○	○	○	○	○	○	○
Current field of work	○	○	○	○	○	○	○

- Recommendation of PGEC

Evaluation methodology

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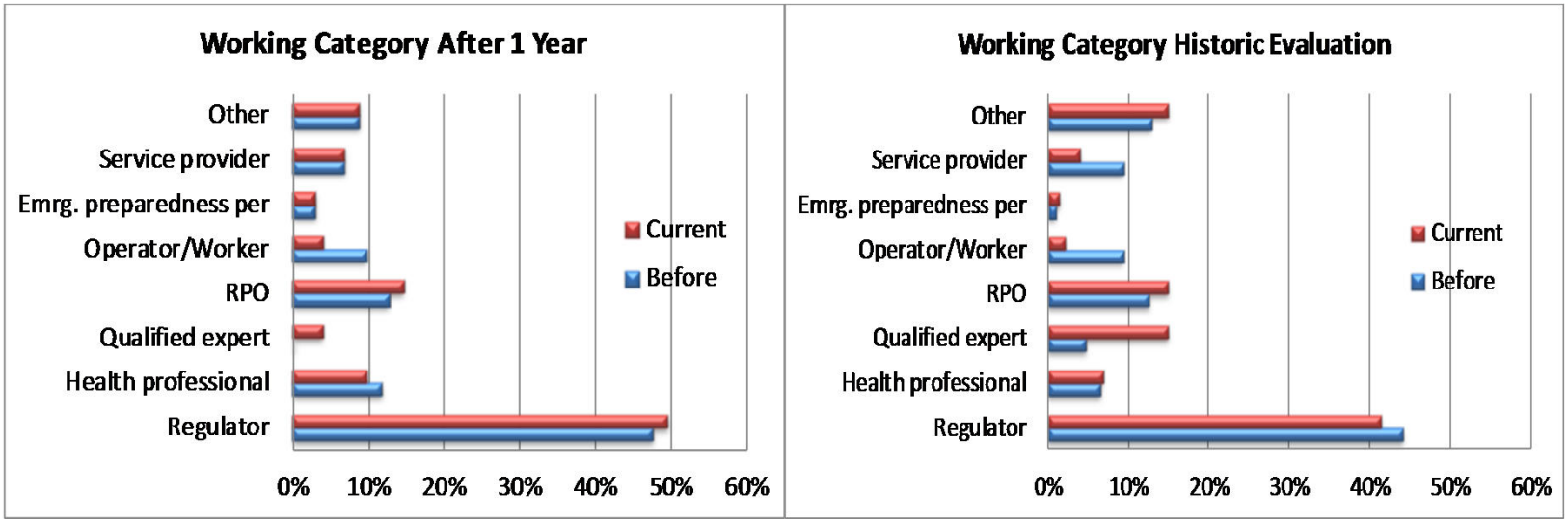
Surveyed population: 1404 (77 courses)

1 YEAR			3 YEARS			5 YEARS			More than 5 years (historic evaluation)		
RTC	No. of participants (No. of courses)	Response rate	RTC	No. of participants (No. of courses)	Response rate	RTC	No. of participants (No. of courses)	Response rate	RTC	No. of participants (No. of courses)	Response rate
ALG	23 (1)	74%	ALG	20 (1)	70%	ARG	11 (1)	82%	ARG	482 (29)	33%
ARG	12 (1)	92%	GHA	20 (1)	80%	MAL	27 (1)	70%	BYE	142 (7)	38%
BRA	1 (1)	100%	BYE	13 (1)	92%	MOR	20 (1)	75%	GRE	57 (3)	69%
GHA	18 (1)	100%	MAL	47 (2)	58%				MAL	145 (7)	52%
GRE	13 (1)	100%							MOR	121 (6)	48%
MAL	61 (2)	72%							SYR	171 (10)	33%
Total of surveyed participants (courses): 128 (7)			Total of surveyed participants (courses): 100 (5)			Total of surveyed participants (courses): 58 (3)			Total of surveyed participants (courses): 1118 (62)		

Results

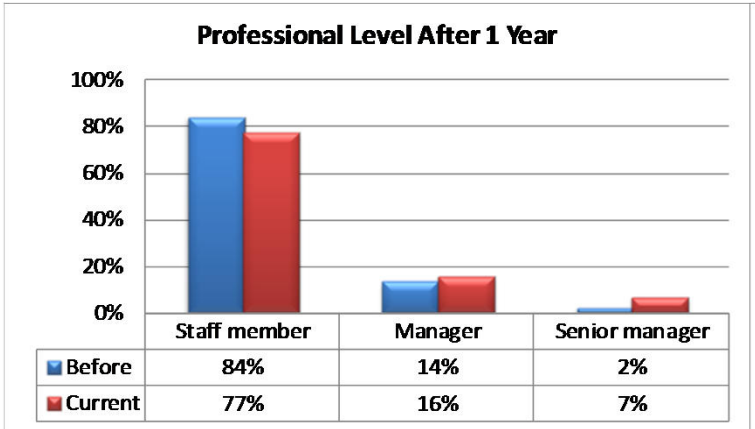
- **PGEC participants' work category**



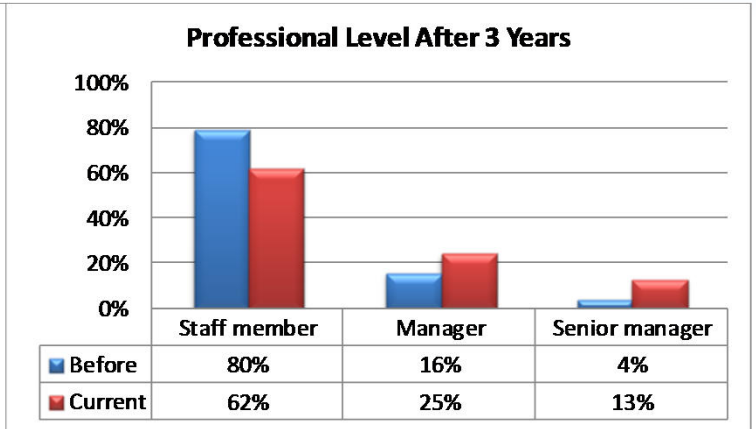
Percentage of participants' working categories, before attending the course and after course completion

Results

- **Impact of the PGEC on professional career and development**

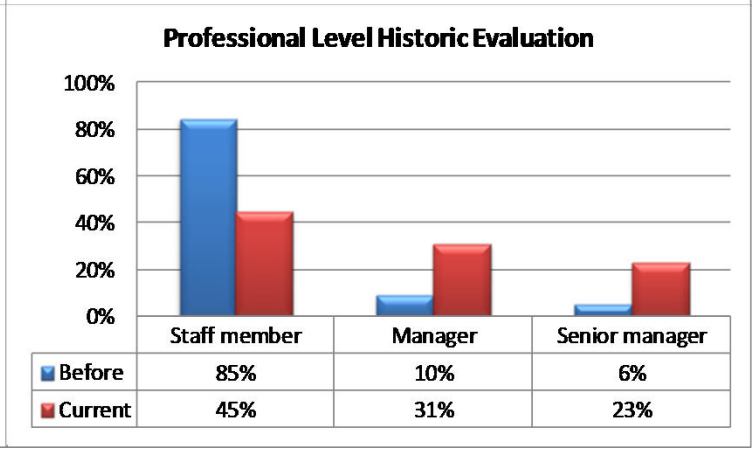


	Staff member	Manager	Senior manager
Before	84%	14%	2%
Current	77%	16%	7%



	Staff member	Manager	Senior manager
Before	80%	16%	4%
Current	62%	25%	13%

	Staff member	Manager	Senior manager
Before	79%	19%	2%
Current	44%	35%	21%

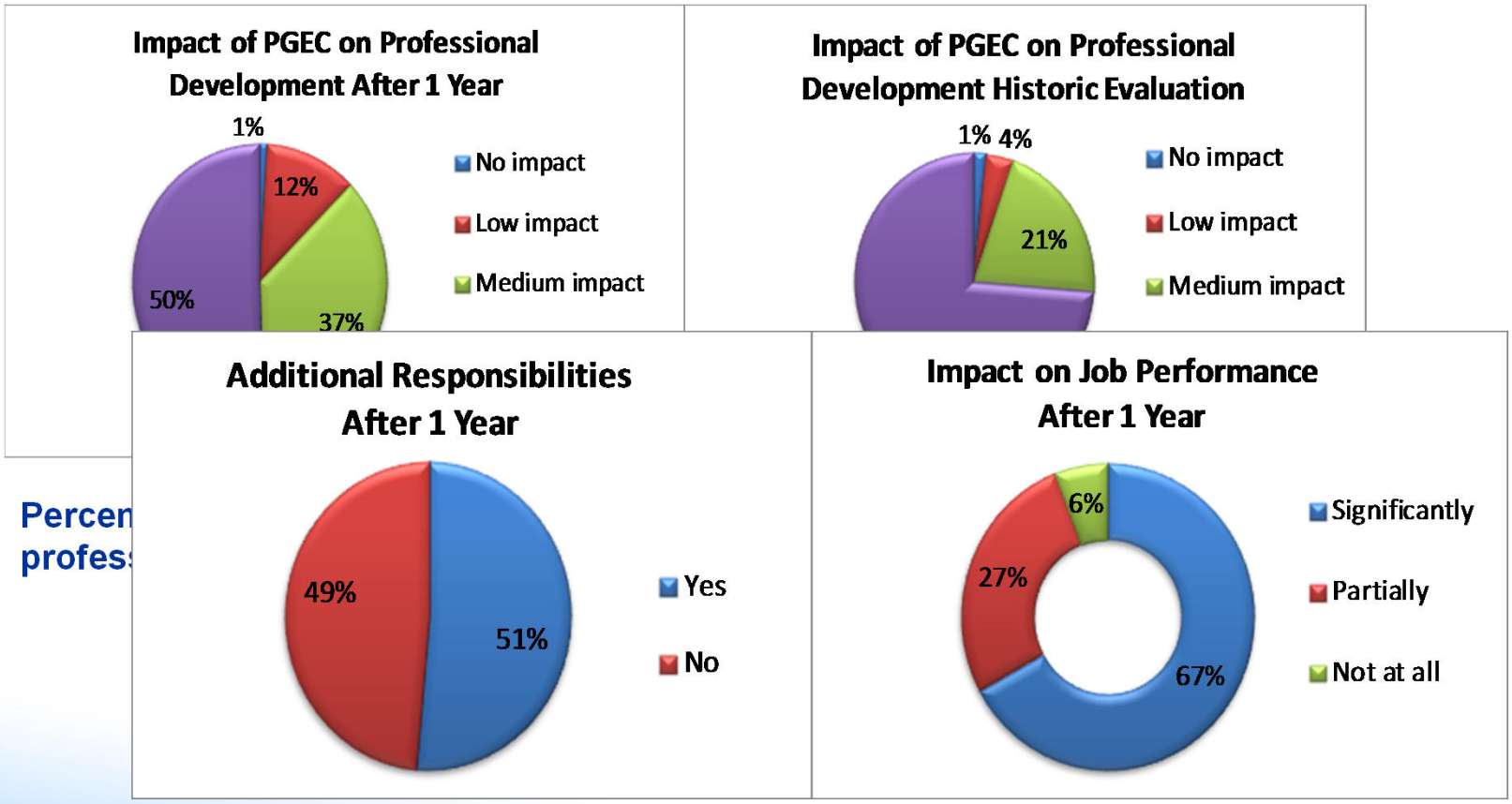


	Staff member	Manager	Senior manager
Before	85%	10%	6%
Current	45%	31%	23%

Percentage of participants` professional levels before attending the course and after course completion

Results

- **Impact of the PGEC on professional career and development**



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Percentage of participants stating that the PGEC had an impact on acquiring additional tasks (left) and improving job performance (right)

Results

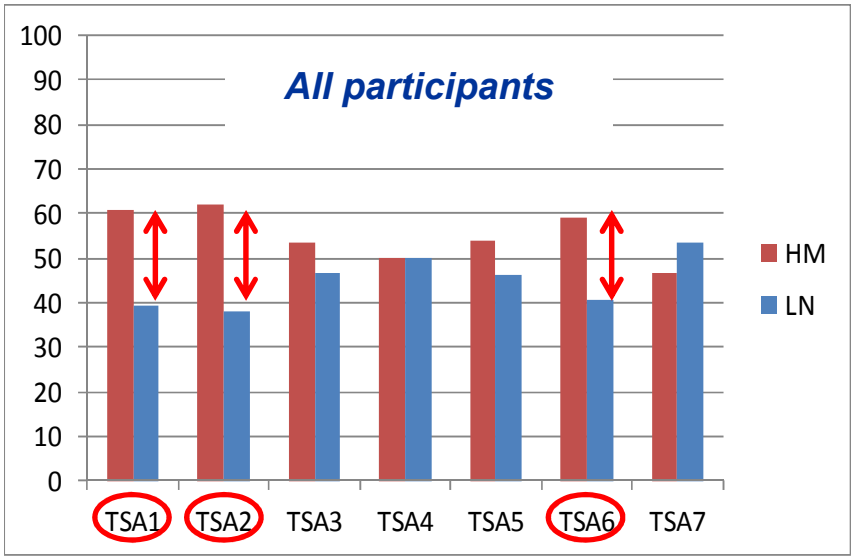
- **Impact of the PGEC on Radiation Safety Infrastructure**

  IAEA categorises Member States' radiation safety infrastructure in terms of Thematic Safety Areas (TSA) to ensure that all aspects of the relevant IAEA Safety Standards are covered in a comprehensive and consistent manner:

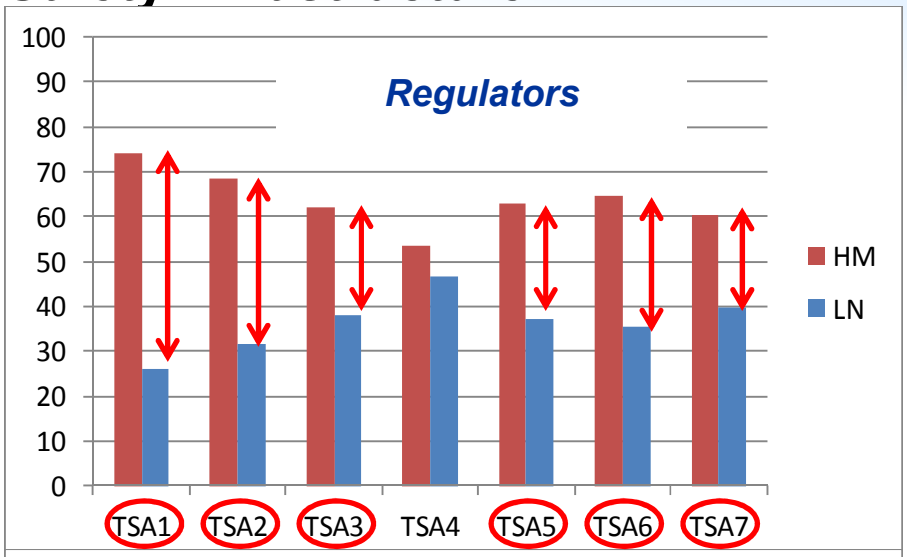
  - TSA1: Regulatory Infrastructure
  - TSA2: Radiological Protection in Occupational Exposure
  - TSA3: Radiological Protection in Medical Exposure
  - TSA4: Public and Environmental Radiological Protection
  - TSA5: Emergency Preparedness and Response
  - TSA6: Education and Training in Radiation Protection
  - TSA7: Transport safety.

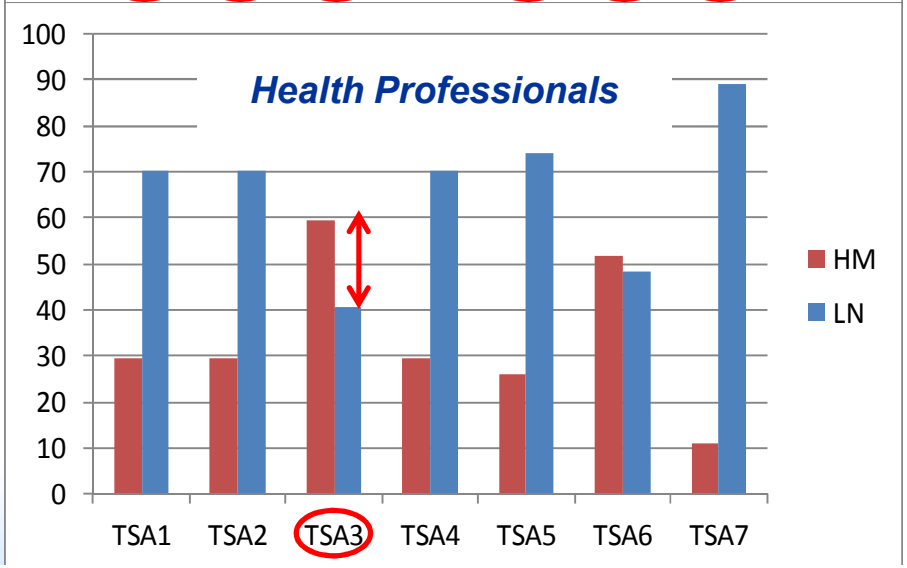
Results

- **Impact of the PGEC on Radiation Safety Infrastructure**



Percentage of answers stating that the knowledge and skills gained in the PGEC had
high-moderate (HM)
low-no (LN) impact
on each TSA (1 year after course completion)





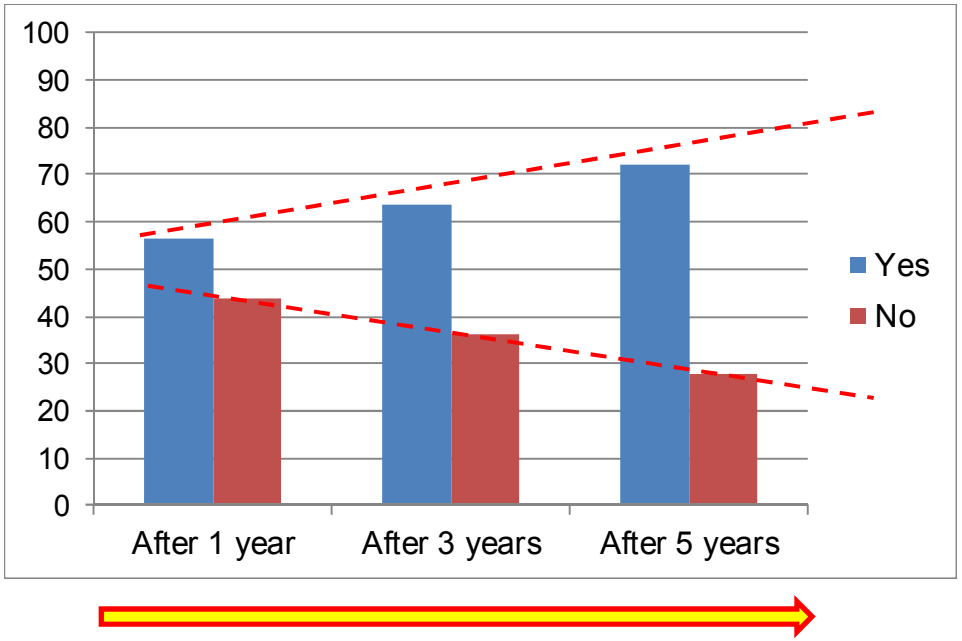
Results

Sustainability and effectiveness of the PGEC

a) Continuity of the PGEC work project

1 year after completing the PGEC, **56%** of the participants confirmed that they have been able to conduct **follow-up activities planned in their work project**

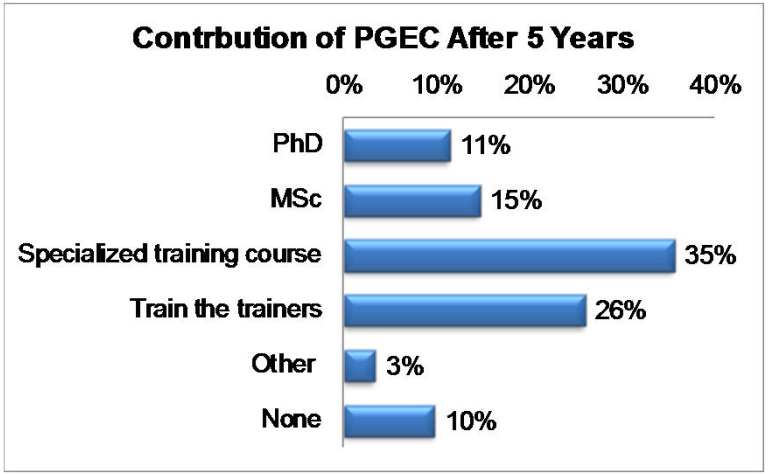
b) Percentage of participants sharing knowledge and skills gained in the PGEC, by organizing or implementing training events



Results

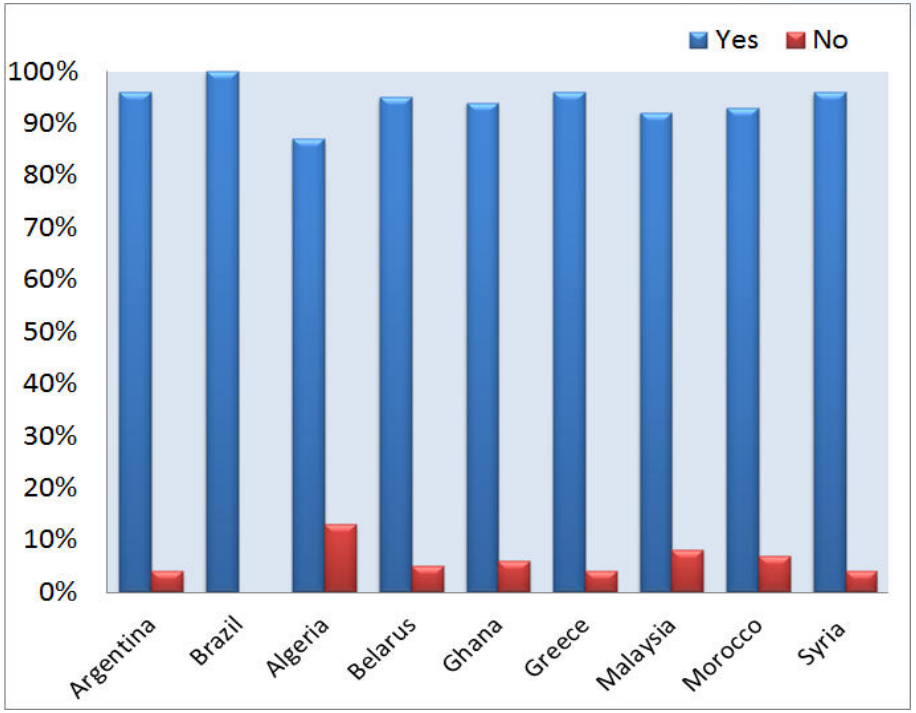
Sustainability and effectiveness of the PGEC

c) Contribution towards academic and/or professional development



PGEC enabled participants to attend **specialized training courses** (35% of answers), **train-the-trainers events** (26%), and **high-level academic programmes** (26% for masters and PhD).

d) On-going success of the PGEC



More than 90% of participants **recommended attending the PGEC** to their **colleagues and/or employees**, reflecting reflects the usefulness, value and relevance of the course

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Conclusions

Take Home Points

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- The responses from the PGEC participants, confirmed that the course has had a positive impact on their **professional careers** and on the **job performances**, and has helped participants gain **additional responsibilities and duties**.
- The PGEC has also contributed towards their **academic advancement** in terms of attaining an MSc or PhD.
- Furthermore the utilization of knowledge and skills acquired during the course has made a significant contribution towards **strengthening the radiation safety infrastructure** in their home country or institution.
- Moreover, the impact evaluation confirmed the **sustainability of the PGEC** in several aspects, such as:
  - continuation of the work project;
  - sharing knowledge and skills through implementation of training events in radiation protection; and
  - an ongoing recommendation from participants to their colleagues to attend the course.

In conclusion, the impact evaluation of the **PGEC** confirmed that the course **plays an important role** by building a **core of competent professionals** in radiation protection and in strengthening the **radiation safety infrastructure at the institutional and/or national levels**.


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Thank you!