

# Efforts to promote Good Servicing Practices in Article 5 countries

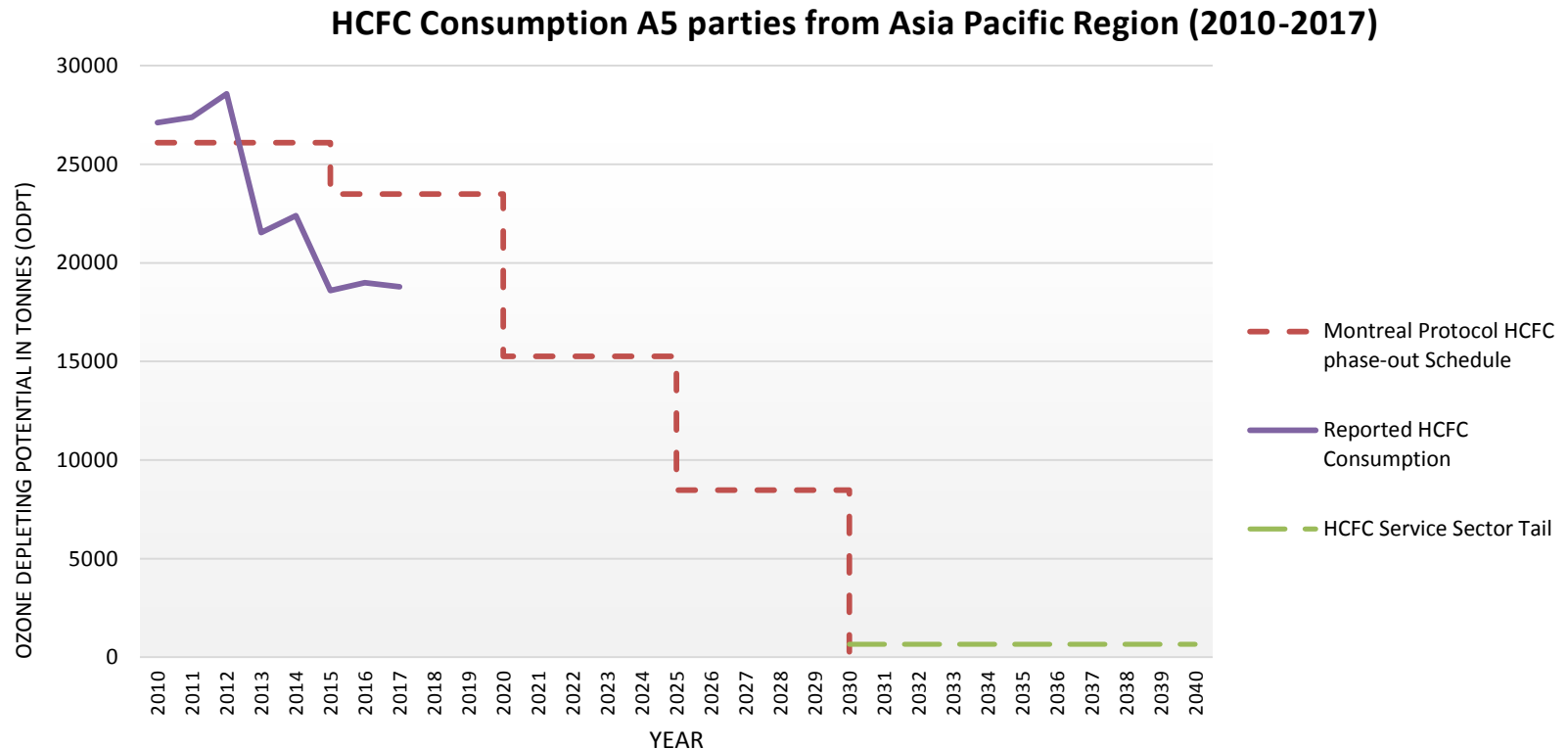
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Ozone2Climate Technology Roadshow  
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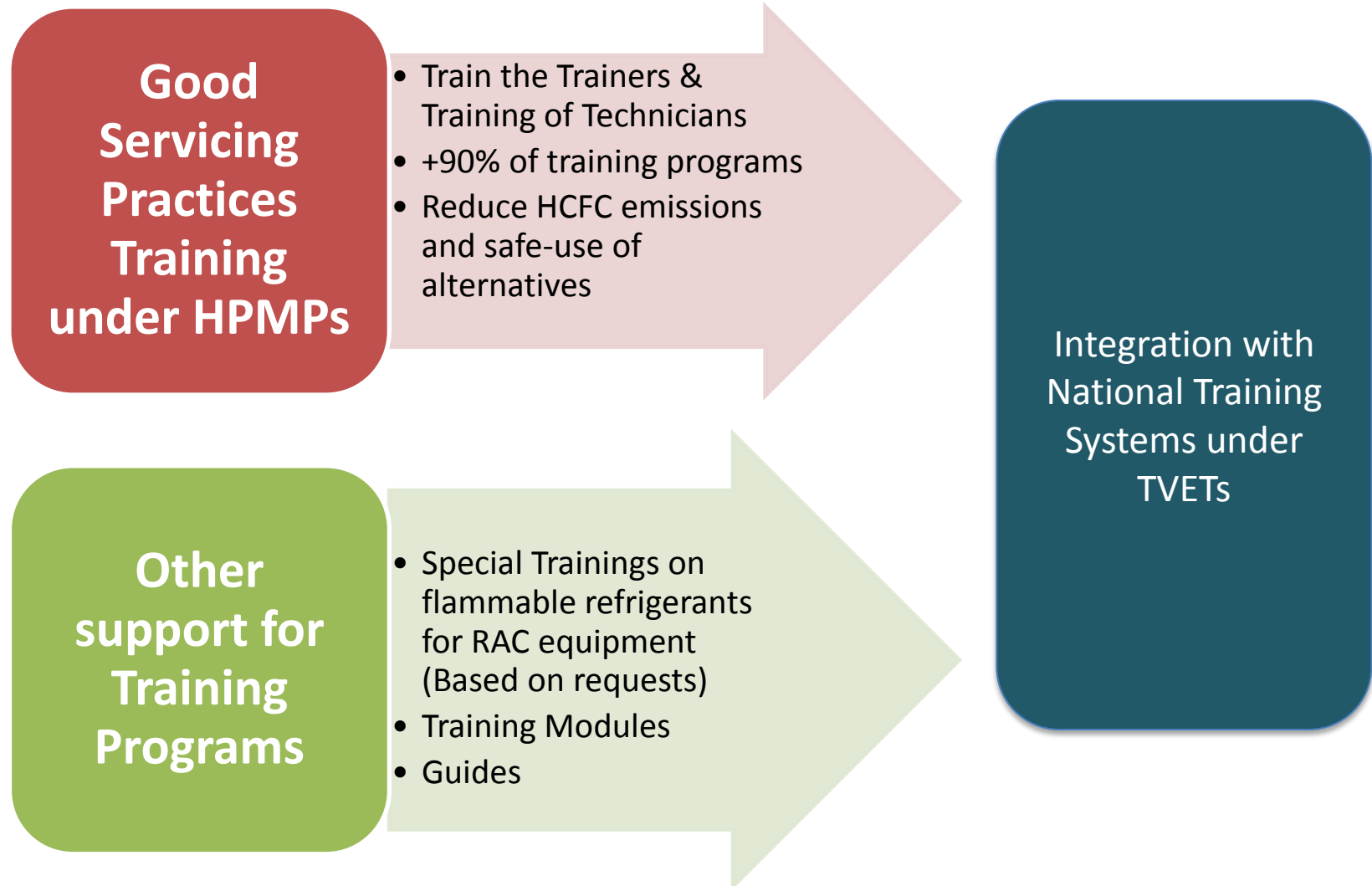
## HCFC phase-out : Importance of RAC Servicing Sector



- **Reduction of HCFC demand in RAC servicing sector is becoming one of the most important interventions for countries to meet their HCFC phase-out targets by 2030.**
- **HCFC management in the servicing sector will be important for servicing tail from 2030-2040 for A5 parties (particularly LVCs)**

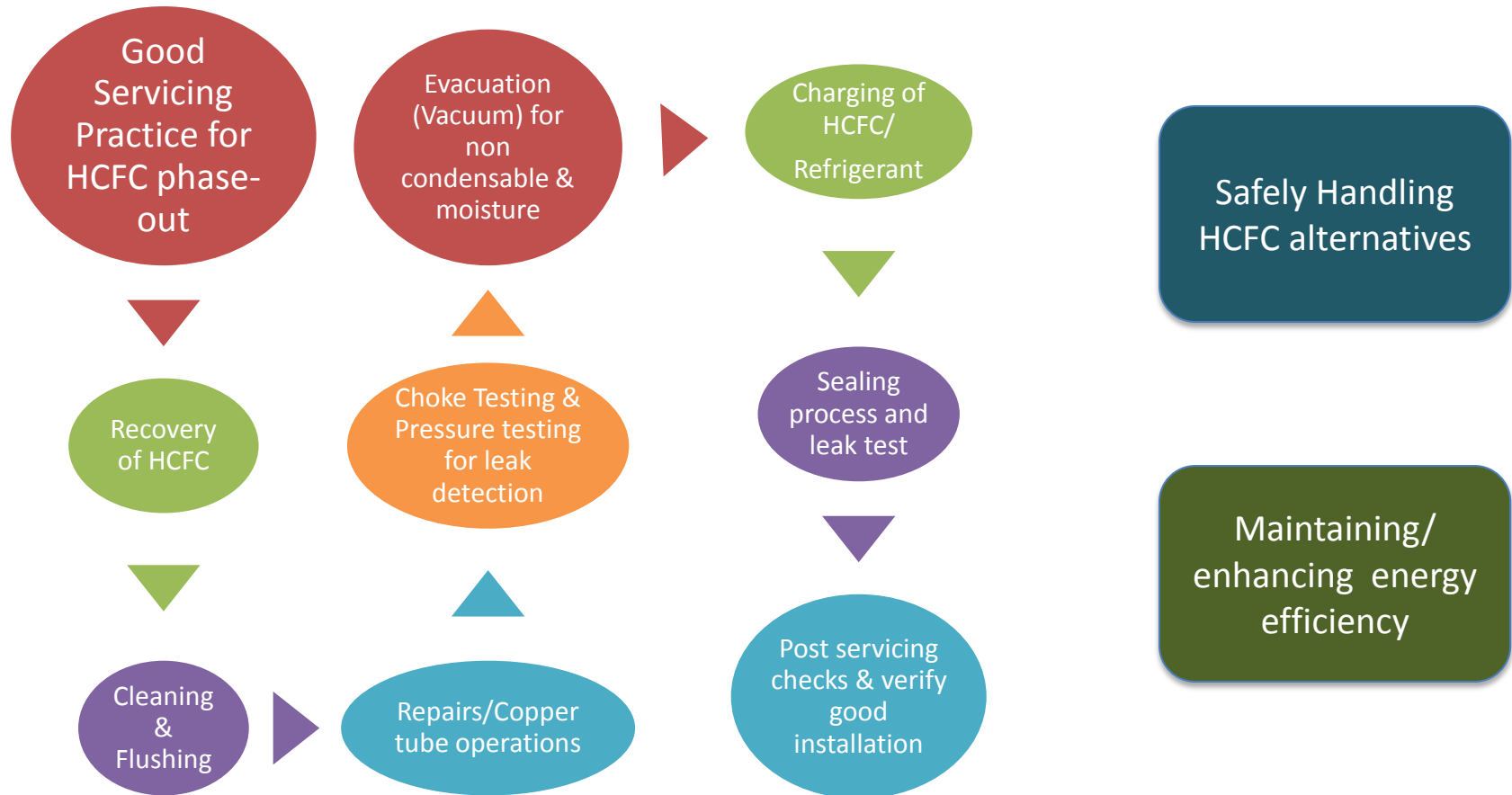
## UN Environment supported trainings for A5 countries

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# Good Servicing Practices (GSP) in RAC equipment

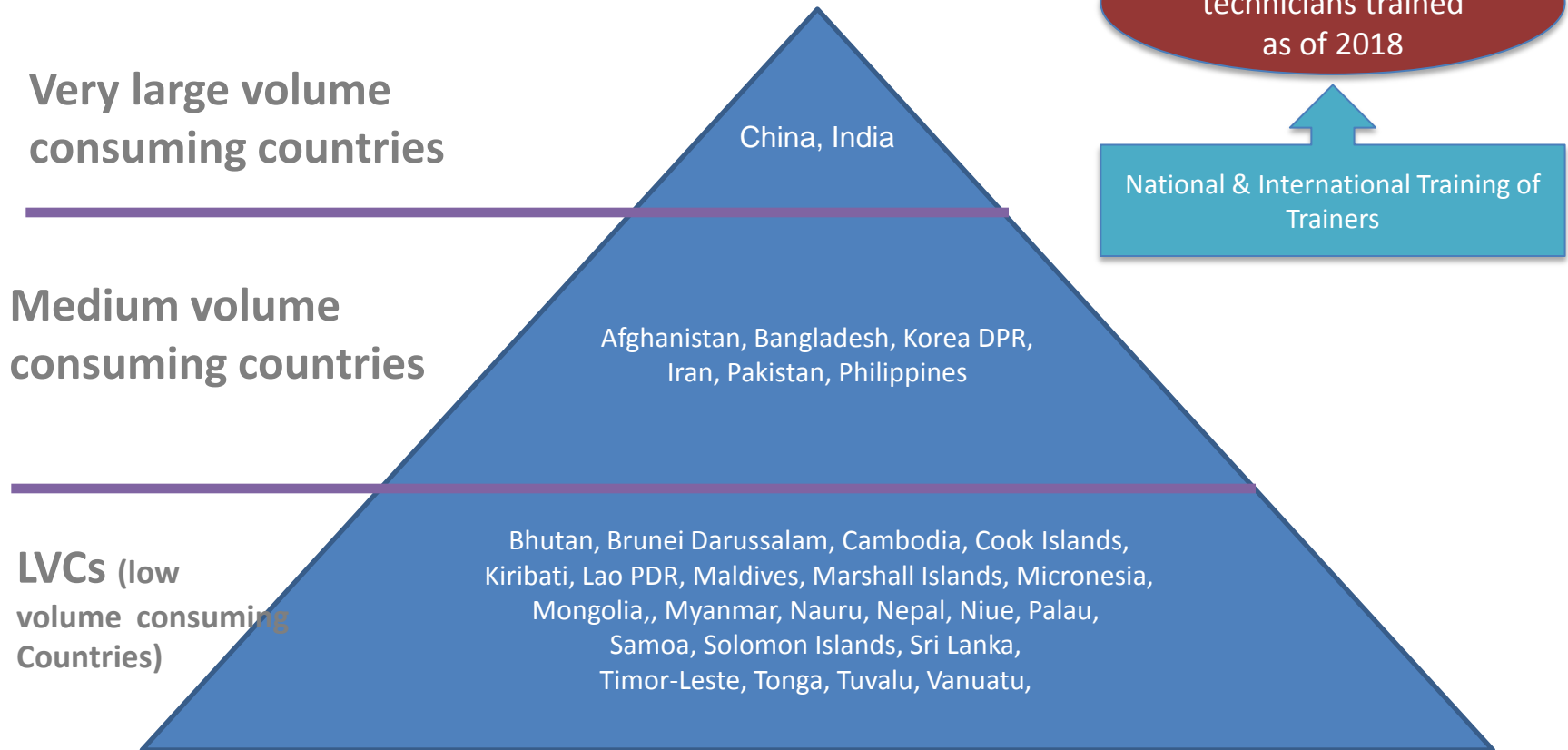
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# Achievement of GSP training under HPMPs in Asia Pacific

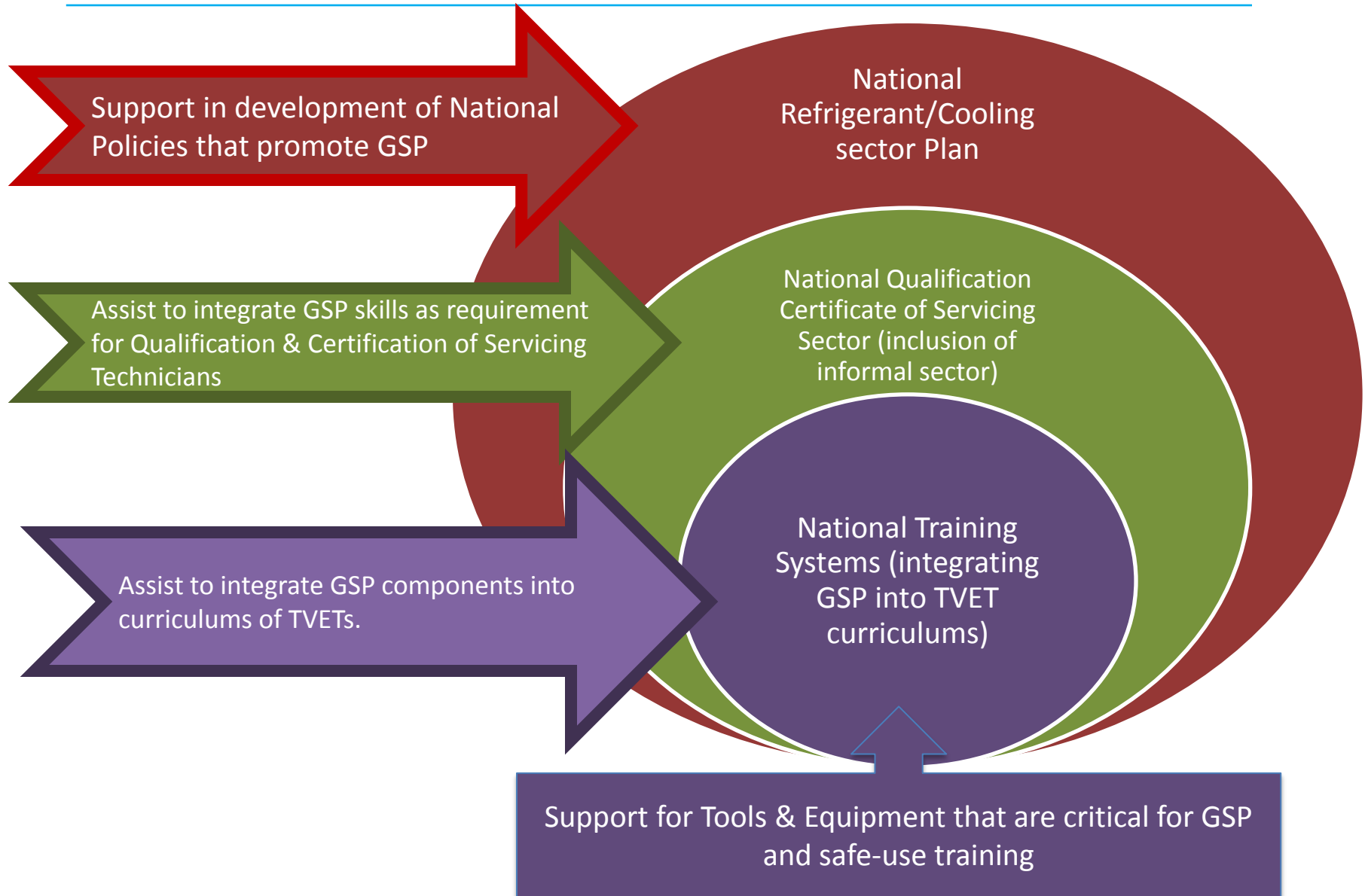
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UN Environment supported A5 countries  
in Asia Pacific



# UN Environment strategy for Sustaining GSP in A5 countries








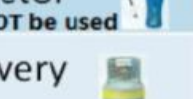


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## Integrating GSP into National Training Systems: Example of Sri Lanka

NVQ Level (Defined by the SL NQF)	Certificate Issued	Eligibility, Duration & Issuing Authority	Provision for Informal Technicians	Skills Gained
Level 3/4	R/AC technician Certification Course	Pass high school and assessment paper, 1 year course and certificate issue for Tertiary Vocational Education Commission (TVEC)	Yes, after assessment for Recognized Prior learning	Mostly on residential R/AC systems on GSP, safe handling and some recovery and re-use. Need more industry experience post certificate
refers to German NQF	Certified Skilled Technician (German Level)	Pass High school and write entrance exam. 3 year course recognized by TVEC and German Govt. Can apply to University of Vocational Technology for Diploma Degree after 1 year study.	No. In exceptional cases if there is already certificate for NVQ level 3/4 and passes the entrance exam.	High skill gained on GSP, Safe use , RRR and various types of refrigerants and systems (MAC, Chillers etc). Exposure to R-290 and R-32 is limited. Directly recruited by industries.
Level 5/6	Diploma Degree in R/AC	Pass High school and write entrance exam. 3 year course. Those with Level 5/6 can pursue Engineering Degree with industry experience (1 year)	No.	Good skill on GSP and some RRR depending on the technical college capacity and infrastructure. Need some industry experience.

## Example of Servicing Tools support for training on new alternatives

Tool	R32	R410A	R22
Gauge manifold 	Slightly different scale for HFC32 and R410A so check with tool supplier if manifold is shareable		
Charge hose 	Common		
Scale 	Common		
Pipe bender 	Common		
Pipe cutter 	Common		
Flaring tool 	Common		R22 type can be used by changing the work process
Torque wrench 	Common		Some flare nut widths are different, others can be shared
Cylinder thread adaptor	Depends on the cylinder – some have different thread for flammable gases	Not applicable	
Vacuum pump 	Common		
Recovery pump 	Check with tool supplier if shareable		
<u>Electr.</u> Leak detector Torch type models CANNOT be used 	Check with tool supplier if shareable		
Refrigerant recovery cylinder			



## Example of Servicing Tools support for training on new alternatives - R290

<b>Lokring</b>	 
<b>Nitrogen Leak Testing</b>	
<b>HC Leak Detector</b>	
<b>HC recovery unit</b>	
<b>Digital Manifold Gauge</b>	

## Challenges for mainstreaming GSP in A5 Countries

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- Limited and time-bound funding under HPMP, therefore integration of GSP with national certification systems and TVETs is essential for sustainability and skills development policies of countries. .
- TVETs lack adequate capacity , tools and equipment for GSP training
- Lack of Qualification Standards and Certification Systems for RAC technicians in some countries.
- The capacity of the Lead Trainers varies and their numbers would need to be increased.
- Many A5 countries have high informal servicing sector, difficult to engage the informal sector for participating in the GSP training.
- Energy Efficiency is not a priority.
- Lack of enabling systems and consumer awareness.

# Technical & Institutional Considerations in the Future

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## Standards and Codes

- RAC equipment standards
- Building Codes
- Refrigerant Standards
- Codes/Standards for Containers, Refrigerant transportation etc.

## Certification of Technicians

- Certification Scheme
- Code of Practice
- Accrediting training institutes/center

## Supporting Policies

- End-user responsibility
- Licensing servicing technicians and workshops
- Ban use of non-refillable containers

## Strengthening local institutions

- Vocational/technical training schools
- RAC servicing associations
- Industry Associations
- Engineering and Technical societies



Industry Feedback and Expectations

Thank you

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