The APSN Green Port Award System

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APEC Ports Services Network (APSN)

Background

Basic factor for future development Green Wave

Green: Common Color of New Generation

Green is an inevitable trend of port development
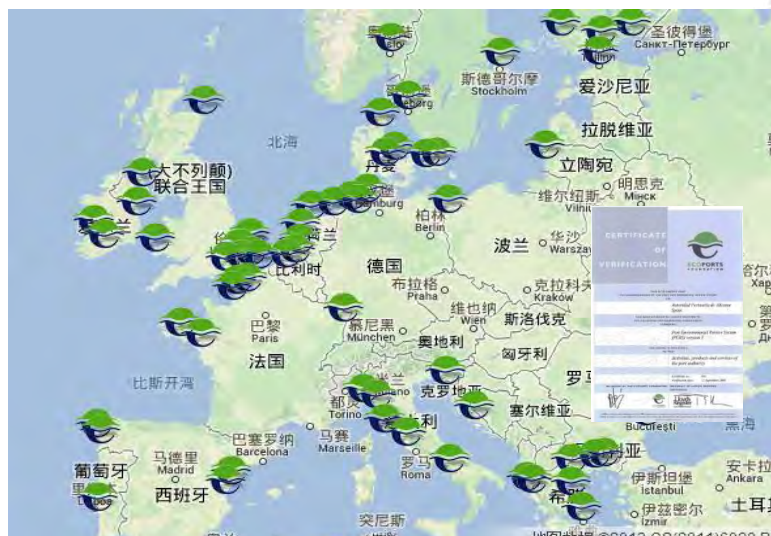
Green is bound to become a necessity of future ports.

Practices on Green Ports

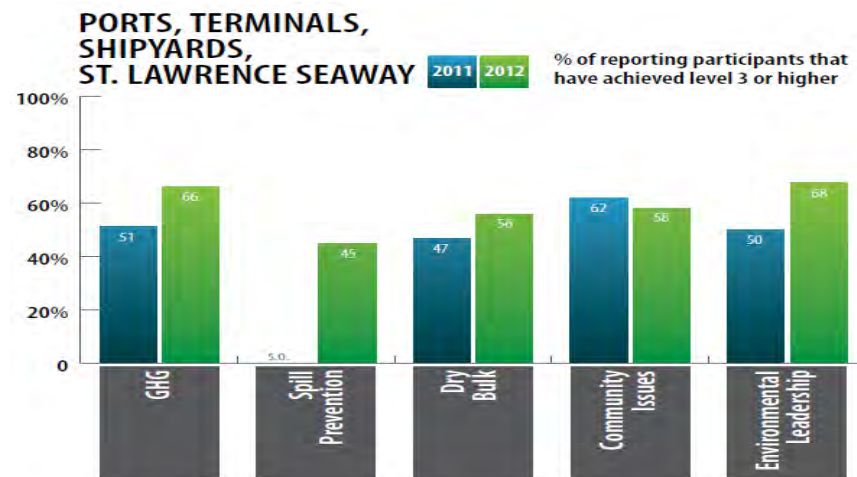| Scope	Systems	Objective
Global (most frequently)	ISO 14001	Any organization including Ports
EU	SDM (EcoPort)	Port Sector
EU	PERS (EcoPort)	Port Sector
North America	Self-evaluation Guides	Ports, terminal and shipyards

Practices on Green Ports

EcoPorts :

Average levels attained by Ports, Terminals and Shipyards (Results based on a scale of 1 to 5)

Year	2008	2009	2010 (excluding new participants)	2010 (including new participants)
GHG Emissions	1.7	2.4	2.6	2.5
Cargo Residues	2.6	2.6	2.8	2.6
Environmental Leadership	/	2.2	2.5	2.4

Source: coast to coast progress report 2010-2011

65% of ESPO members had set up their own environmental monitoring mechanism, and the ratio increased to 77% in 2009.
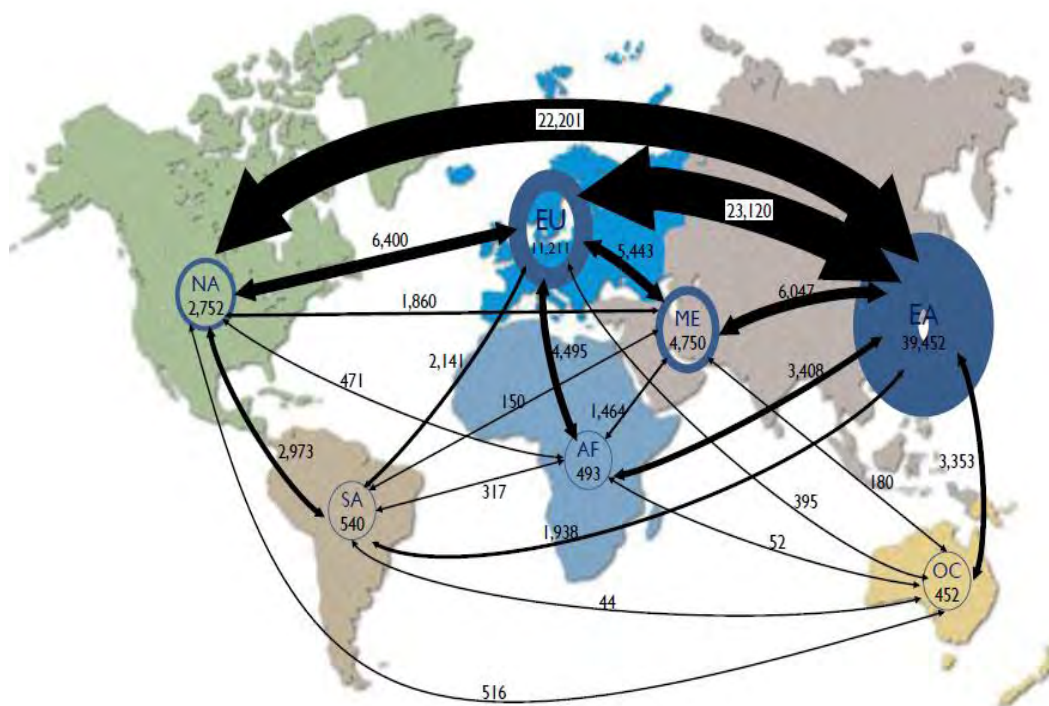
Green Marine →

PORTS, TERMINALS, SHIPYARDS, ST. LAWRENCE SEAWAY 2011 2012 % of reporting participants that have achieved level 3 or higher

Source: Green marine2012 Progress Report

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Background

Global container traffic between continents in 2006 ('000 TEUs)

TOP 50 WORLD CONTAINER PORTS

Rank	Port, Country	Volume 2012 (Million TEUs)	Volume 2011 (Million TEUS)
1	Shanghai, China	32.53	31.74
2	SIngapore, Singapore	31.65	29.94
3	Hong Kong, China	23.10	24.38
4	Shenzhen, China	22.94	22.57
5	Busan, South Korea	17.04	16.18
6	Ningbo-Zhoushan, China	16.83	14.72
7	Guangzhou Harbor, China	14.74	14.42
8	Qingdao, China	14.50	13.02
9	Jebel Ali, Dubai, United Arab Emirates	13.30	13.00
10	Tianjin, China	12.30	11.59
11	Rotterdam, Netherlands	11.87	11.88
12	Port Kelang, Malaysia	10.00	9.60
13	Kaohsiung, Taiwan, China	9.78	9.64
14	Hamburg, Germany	8.86	9.01
15	Antwerp, Belguim	8.64	8.66
16	Los Angeles, U.S.A.	8.08	7.94
17	Dalian, China	8.06	6.40
18	Keihin ports*, Japan	7.85	7.64
19	Tanjung Pelepas, Malaysia	7.70	7.50
20	Xiamen, China	7.20	6.47

Objectives of GPAS

➢ Improve environmental awareness and increase the understanding of green port development strategy, with the aim of achieving a balance between economic development and environmental protection in the APEC ports community;

➢ Promote the sustainable development of ports in APEC and protect the port environment for the benefit of the entire APEC community;

➢ Contribute the harmonization of regulations and improve interoperability of green port systems in the APEC region;

➢ Establish an APEC green port performance benchmark based on this program, and share best practices and encourage mutual assistance among APEC ports.

Sustainable development

SAFE

Networking for Stronger Port Industry and Better Community

Why Ports should be involved in the GPAS
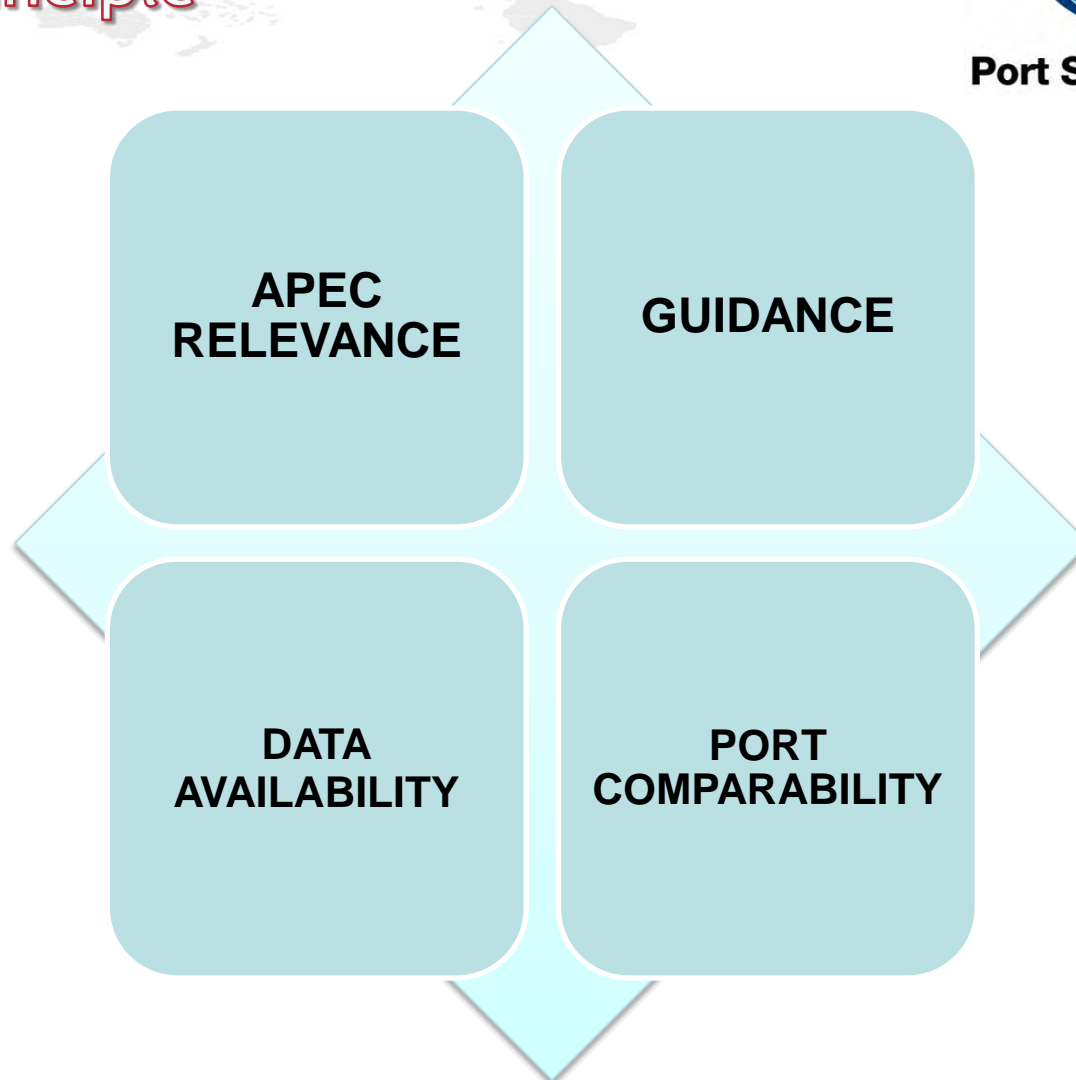
➢ Provide a clear objective to develop green port plans;

➢ Provide a platform to share the best practices to promote green growth among the APEC ports;

➢ Raise the profile of ports so as to attract more attention from shipping companies, shippers and investors as well;

➢ Help to improve sustainable developing capacity and overall competitiveness of ports.
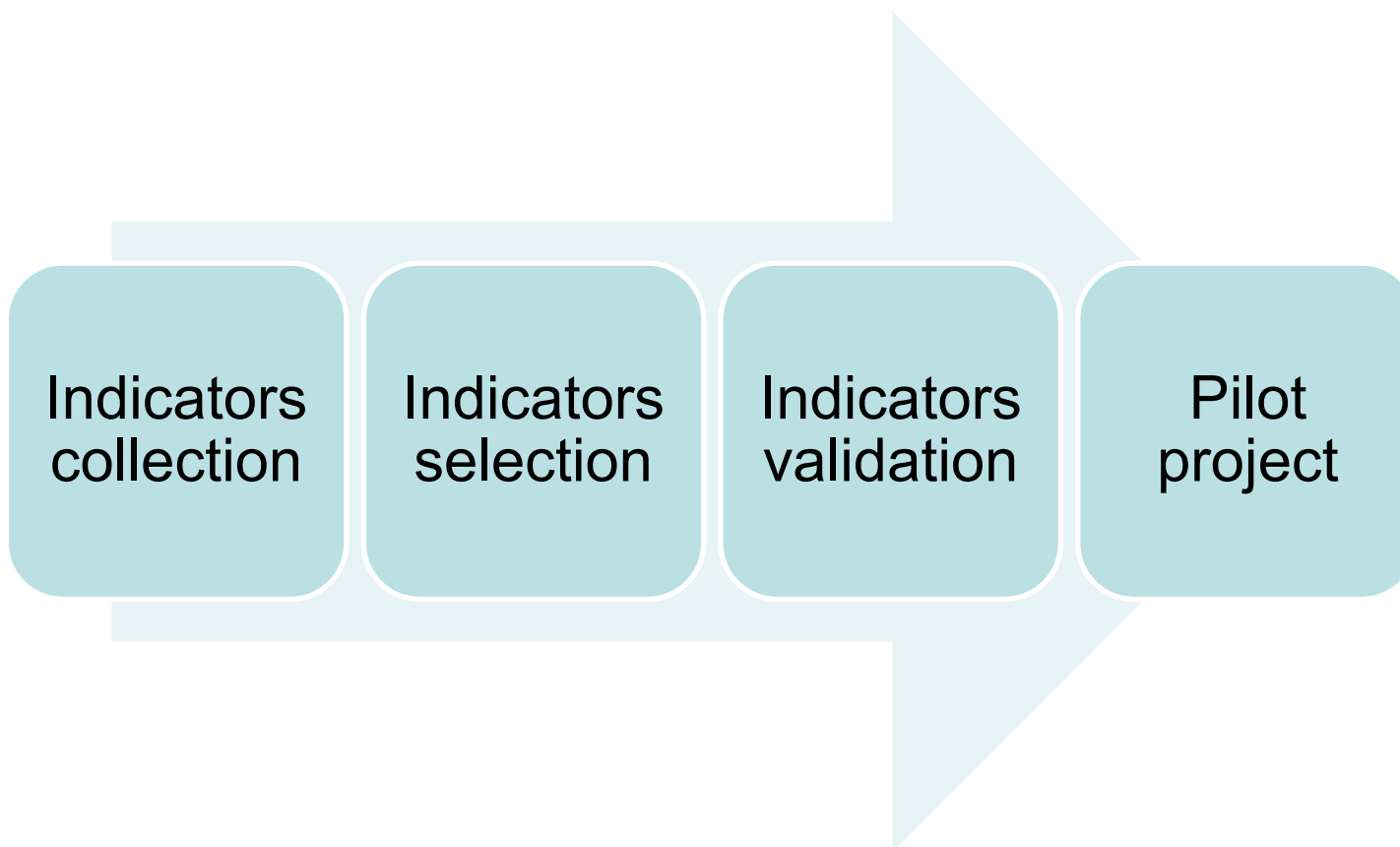
GPAS Principle

APEC RELEVANCE

GUIDANCE

DATA AVAILABILITY

PORT COMPARABILITY

APSN GPAS Implementation Methodology

Indicators collection → Indicators selection → Indicators validation → Pilot project

Indicators collection

Selected ports
   Indicators in green plans of several ports

Program and report from other organizations
   Indicators in Environment Management Standards (EMS), similar programs or reports issued by other organizations

Research paper
   Research papers published in the proceedings of international conferences and academic journals.

Internal sources
   Indicators developed by the APSN Secretariat.

Indicators validation
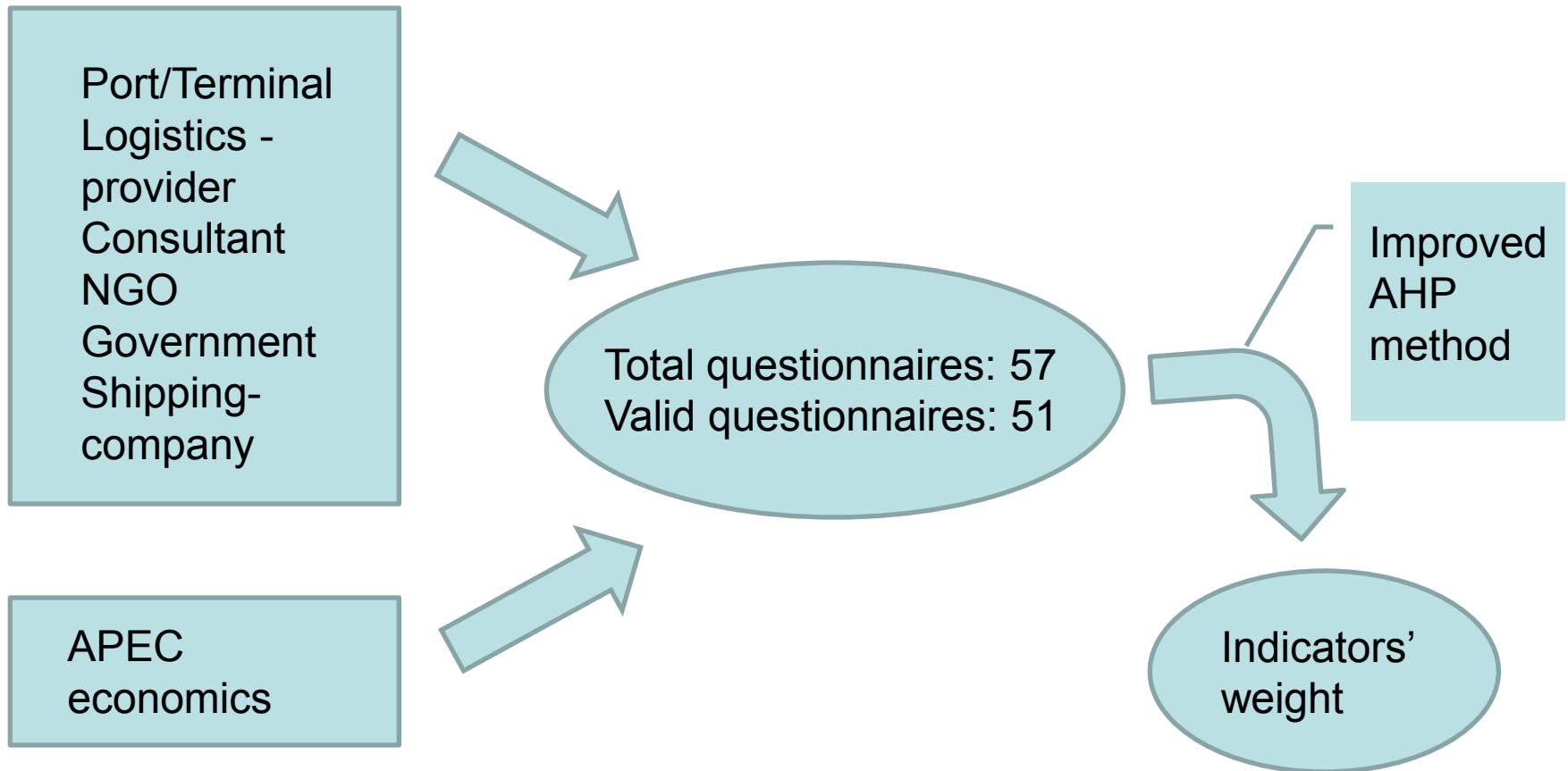
• Through a questionnaire developed for distribution to relevant stakeholders;

• Possible site visits to selected ports in the APEC region.

Indicators weight

Port/Terminal Logistics - provider Consultant NGO Government Shipping-company

APEC economics

Total questionnaires: 57
Valid questionnaires: 51

Improved AHP method

Indicators' weight

Commitment and Willingness (0.31)	Development Aspirations (0.53)	Any green EMS (0.26)
		Any green development planning (0.30)
		Any green support funding (0.30)
		Any green annual report (0.14)
	Introduction & Promotion (0.47)	Any green training program (0.75)
		Any green promotion campaigns, e.g. seminars, workshops or other activities (0.25)
Action and Implementation (0.44)	Green Energy Structure (0.26)	Using renewable energy sources (sun, tide, wind and so on) (0.29)
		Encouraging use of low-sulphur fuel (0.20)
		Encouraging use of LNG (0.24)
		Encouraging use electrically powered equipment (0.27)
	Energy Saving Technology (0.24)	Using energy-saving devices (0.50)
		Any energy saving policy? e.g. reducing ship speed after landfall (0.50)
	Environmental Technology (0.24)	Using recyclable resources (0.32)
		Noise control methods (0.13)
		Ballast water pollutant control (0.27)
		Cargoes spilling control & prevention (0.28)
	Integrated Management (0.26)	Avoiding pollutants during cargo handling and port maintenance (0.20)
		Fuel oil spilling contingency plan (0.19)
		Sewage treatment (and water resource control) (0.21)
		Wetland & marine habitat preservation (0.15)
		Port entrance sediment & coastal erosion control (0.14)
		Aesthetic interference, visual impact, and improving city scenery (0.11)
Efficiency and Effectiveness (0.25)	Energy Utilization (0.39)	Energy consumption reduction (per throughput) (0.54)
		Renewable energy increment in the total energy structure (0.46)
	Environmental Protection (0.61)	Air pollution reduction (0.34)
		Noise control result (No. of complain) (0.21)
		Solid waste dumping management defection (0.22)
		Liquid pollution control (0.23)

Pilot Project

Three to five ports will be invited to participate in a pilot project conducted by APSN Secretariat. These ports are expected to be located in regions with different developing levels.

Application form GPAS and the Application Guidelines on Green Ports Development will be prepared and submitted to the selected port to see their input/feedback.

Evaluation Guidelines on Green Ports Development will also be prepared and distributed to selected experts in APEC economics

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A Glance of Application Form

2.4 Integrated Management

Objective : to ascertain what integrated management measures have been introduced by the port authority's eligible tenants / users.

Has the port fulfilled the following criteria?	Status	Proof / Justification (if the "Status" is "Yes")
2.4.1 Avoiding pollutants during cargo handling and port maintenance Note:	A. Yes B. No C. N.A.	
2.4.2 Fuel oil spilling contingency plan Note:	A. Yes B. No C. N.A.	
2.4.3 Sewage treatment (and water resource control) Note:	A. Yes B. No C. N.A.	
2.4.4 Wetland & marine	A. Yes	

Evaluation Criteria

Level	Criteria
1	**Very poor** (No green practices has been implemented to date)
2	**Poor** (Only very limited green practices has been implemented to date)
3	**Medium** (Compliance with applicable regulations and adherence to APSN guidelines on green port)
4	**Good** (Systematic use of a defined number of best practices)
5	**Excellent** (Integration of best practices into an adopted management, Introduction of new technologies or management)

The experts in an Evaluation Committee organized by APSN will give a score for each indicator from 1 to 5 based on the statement provided by ports in their applications for GPAS. The final score of a port will be calculated with the weight of the indicators. The award boundary is to be determined with the help of information collected from pilot project.
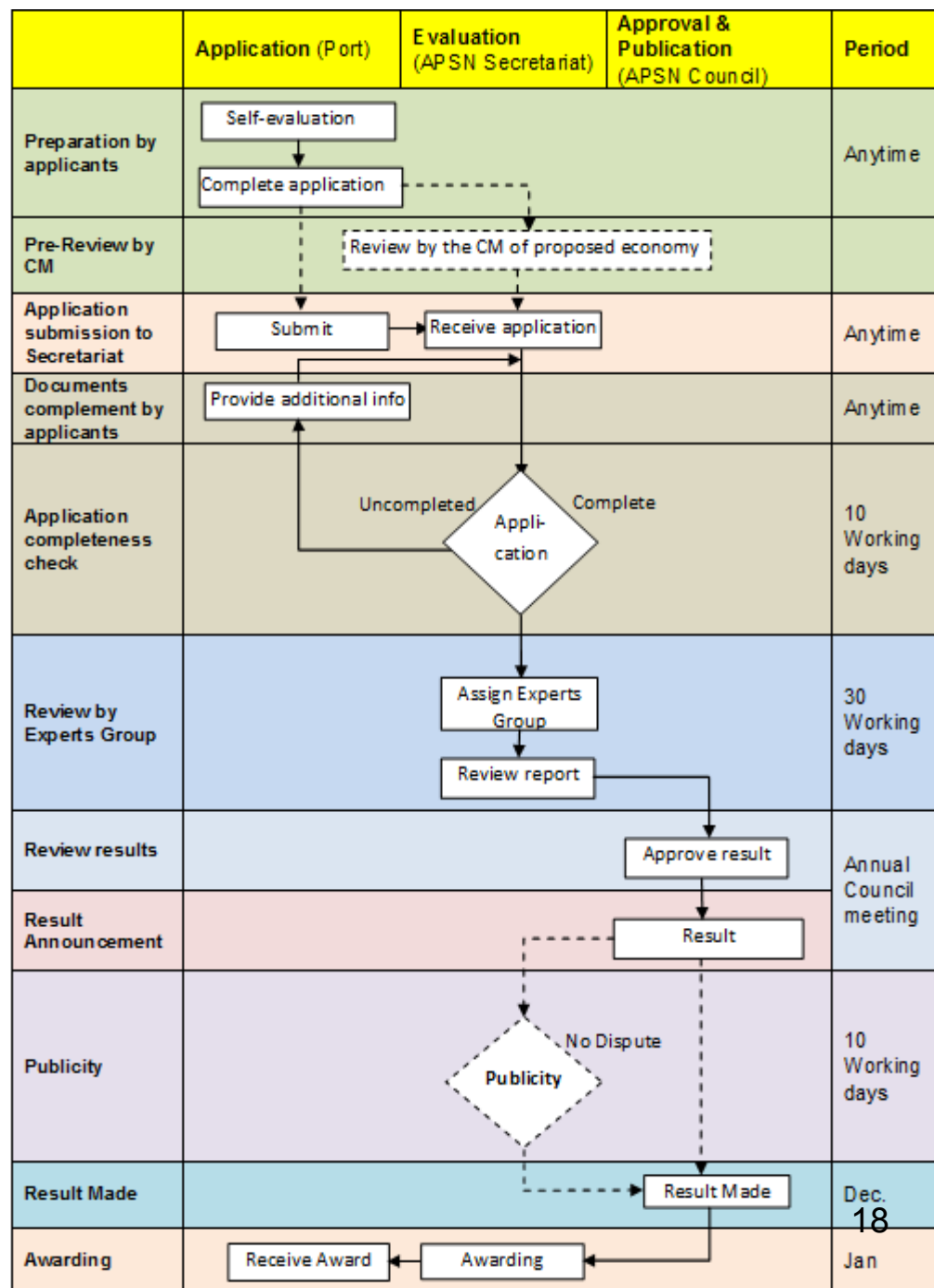
Implementation Program

- **Application Process**
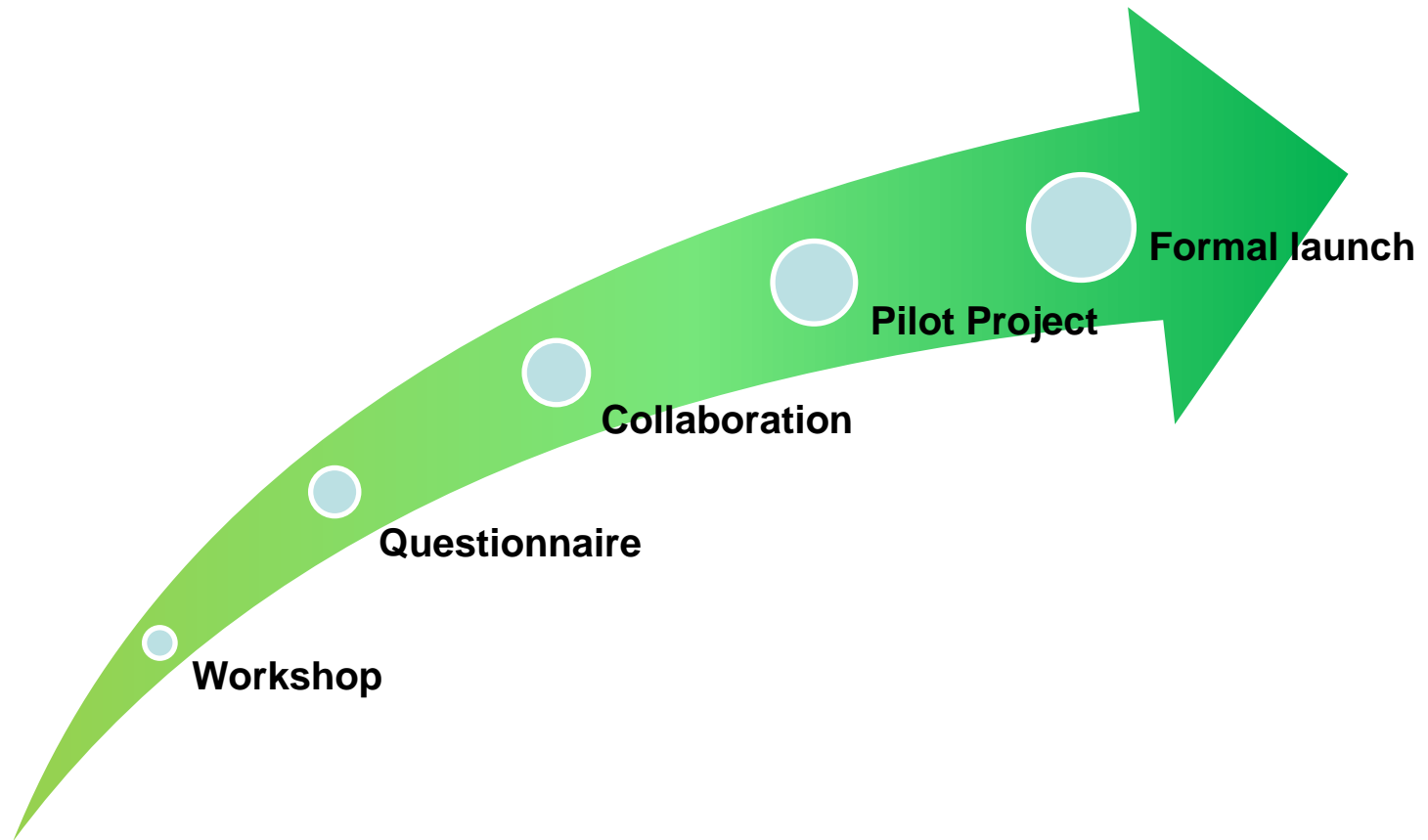- **Experts Evaluation**
- **Draft Evaluation Report**
- **Approval, Publication and Awarding**

	Application (Port)	Evaluation (APSN Secretariat)	Approval & Publication (APSN Council)	Period
Preparation by applicants	Self-evaluation → Complete application			Anytime
Pre-Review by CM		Review by the CM of proposed economy		
Application submission to Secretariat	Submit →	Receive application		Anytime
Documents complement by applicants	Provide additional info			Anytime
Application completeness check	Uncompleted	Application — Complete		10 Working days
Review by Experts Group		Assign Experts Group → Review report		30 Working days
Review results			Approve result	Annual Council meeting
Result Announcement			Result	
Publicity		Publicity — No Dispute		10 Working days
Result Made			Result Made	Dec.
Awarding	Receive Award ← Awarding			Jan

GPAS Implementation Steps

Port Services Network

Formal launch

Pilot Project

Collaboration

Questionnaire

Workshop

Thank You For Your Attention!

Networking for Stronger Port Industry and Better Community