



The Shelf Programme: A decade of successfully helping to secure the maritime rights of developing Coastal States

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The Shelf Programme: A decade of successfully helping to secure the maritime rights of developing Coastal States

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A Centre Collaborating with UNEP

Preface

Twelve months after reaching the magic number of 60 ratifications, the 1982 UN Convention on the Law of the Sea entered into force on 16 November 1994. From that time on, coastal states had 10 years, from when they ratified, to make their submission on the limits of the continental shelf beyond 200 nautical miles in accordance with the Convention. However, it was only in 1999, when the Commission on the Limits of the Continental Shelf (CLCS) adopted their Scientific and Technical Guidelines, that the expected standard of such submissions with regard to required data, information, and technical and scientific work was internationally recognized. It became clear that developing States Parties would have great difficulty in meeting those standards because of low capacity and the short time remaining for many of them of the 10-year period.

In this situation, three innovative actions were taken. Firstly, based on a Norwegian initiative, the UN General Assembly passed a resolution in 2002, calling upon UNEP to work through its associated GRID system to assist developing states with data and expertise in the preparation of their submissions. Secondly, that same year, the States Parties Meeting decided that, for the States Parties that had ratified prior to the adoption of the CLCS' Guidelines in 1999, the 10-year period should commence at that date. Thirdly, the States Parties Meeting in 2008, once again recognizing the situation of many developing states, agreed that the submission of preliminary information on the outer limits could be accepted as meeting the 10-year period requirement. Fortunately, these actions have made it possible for all the relevant developing coastal and small island States Parties

to lodge either a full submission or a document of preliminary information within their prescribed 10-year period.

I am convinced that the lodgement of all the relevant documents by the developing States would not have been anywhere near as successful without the support of the Shelf Programme, which started in 2004, funded by Norway and hosted by the GRID Centre in Arendal. One of the Shelf Programme's essential achievements was, at a very early stage, to establish the efficient digital database, the "One Stop Data Shop" (OSDS). The OSDS assembled relevant worldwide data (public and some proprietary) and made it available at no cost to any state working on their submission. . The Shelf Programme has also been directly involved and instrumental in the preparation of half of the full submissions of states in Africa and, in cooperation with Geoscience Australia, most of those of the Pacific Island states. During this work, and through dedicated training workshops, the Shelf Programme has contributed invaluable to capacity building and transfer of geoscientific know-how.

Currently the Shelf Programme is involved in assisting those few developing states that are still to complete their submissions. However in the future the submissions of African and Pacific states will reach the top of the queue in the CLCS. At that stage, many states will most likely need further technical assistance, this time for the purpose of communication and interaction with the CLCS during the examination of their submission. Therefore the need for the Shelf Programme and its "One Stop data Shop" to support developing states will be there for years to come.



Harald Brekke

Former member of CLCS (1997–2012)

Senior Geologist

Norwegian Petroleum Directorate

Preface

When the Shelf Programme initiated its implementation phase in 2004, only 3 submissions had been received by the United Nations Commission on the Limits of the Continental Shelf, and the Scientific and Technical guidelines and process for delineating the extended continental shelf were not well understood, even within many developed countries. With support from the Norwegian Government, GRID-Arendal recruited an international team who quickly gained in-depth understanding of article 76 of UNCLOS to establish the Shelf Programme. The number of States who have received assistance from the Shelf Programme over the last 10 years is a testament to their hard work and enthusiasm during this pioneering endeavour.

The United Nations Environment Programme, who tasked GRID-Arendal with supporting developing states with their article 76 submissions, recognised the important role that secure maritime boundaries play in the peaceful governance of the ocean, the protection of the environment and the sustainable use of resources. One of the most exciting aspects of GRID-Arendal's Shelf Programme is that it has helped developing states build sustainable technical and scientific capacity in a range of areas and this capacity is now being used to develop additional projects with a variety of environmental, social and economic benefits. Consequently, GRID-Arendal looks forward to another decade of constructive collaboration with the coastal States with which it has forged lasting and highly productive working relationships.



A handwritten signature in black ink that reads "Peter T. Harris". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Peter T. Harris
Managing Director
GRID-Arendal

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Acronyms

CLCS	Commission on the Limits of the Continental Shelf
ECOWAS	Economic Community of West African States
ECS	Extended Continental Shelf
EPOG	Enhancing Pacific Ocean Governance
MFA	Norwegian Ministry of Foreign Affairs
PIDs	Preliminary Information Documents
SOME	State of the Marine Environment
SPC/SOPAC	Secretariat of the Pacific Community/Applied Geoscience and Technology Division
UNCLOS	United Nations Convention on the Law of the Sea
UN DOALOS	United Nations Division of Ocean Affairs and the Law of the Sea

Introduction

Not so long ago there was real concern that many developing States would not make the United Nations imposed deadline for lodging submissions for extended continental shelf. We can now look back on ten years of successful capacity building, technical and scientific support and see the tangible results of the pioneering Shelf Programme. All relevant developing States have lodged their submissions and those with an extended deadline are well on the way. The Shelf Programme has had a role in many of these submissions – sometimes quite small with the provision of data, or advice, but sometimes very extensive, with multi-year capacity building, support to data acquisition and technical and scientific support. Either way, the Shelf Programme has played a part in the peaceful resolution of ocean space.

The roots of the Shelf Programme date back to 1998 when scientists from Norway began to understand the difficulty that many developing States were likely to encounter in their effort to define their extended continental shelf. During the 2002 United Nations General Assembly the Government of Norway called attention to these concerns. The States Parties responded with a resolution that “Calls upon the United Nations Environment Programme (UNEP) ... to expand on a voluntary basis the capacity of existing GRID centres to store and handle research data from the outer continental margin ... and making use of existing data management mechanisms ... with a view to serving the needs of coastal States, and in particular developing countries and small island developing States, in their compliance with article 76 of the Convention.” So in 2004 in response to the United Nations resolution and following consultation with developing States, the Shelf Programme began to develop its extensive programme of work.

Outcomes such as the United Nations Commission on the Limits of the Continental Shelf’s positive recommendations regarding submissions from developing States, are clear acknowledgment of the impact of Shelf Programme support. Longer-term impacts and spinoffs may not be immediately obvious, but there are signs that the work of the Shelf Programme and partner organisations has influenced regional cooperation, multiagency coordination, internal capacity and the development of regional and national marine policy.

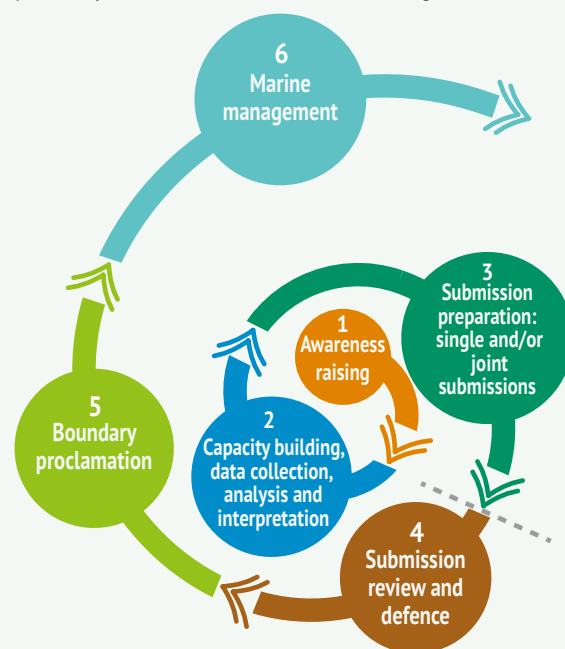
The Shelf Programme, though primarily focused on article 76 of the Convention on the Law of the Sea, has shone a spotlight on UNCLOS in general, including the responsibility

of signatory States to sustainably use and manage their marine environment. This increased awareness has helped GRID-Arendal to begin developing a broader programme of marine related activities under the banner of Marine and Coastal Resources.

The establishment of the Marine and Coastal Resource Programme has been driven from the bottom up, with countries raising issues of marine space governance that are facing them today. For instance, the difficulty of enforcing fisheries with poorly defined boundaries and badly drafted legislation, the need to have an effective title administration framework to deliver security of tenure to operators and reduce the risk of corruption, balancing environmental pressures with development or the fear of sea level rise impacts on the extent of jurisdictions. The Marine and Coastal Resource Programme includes some of the activities still necessary to finalise maritime boundaries – many States recognise that lodging the submission is the first step in establishing internationally recognised maritime boundaries – but it also supports these other pressing issues identified by the States.

The Shelf Programme - circles 1 to 3

Expanded by the Marine and Coastal Resources Programme - circles 4 to 6



The Shelf Programme

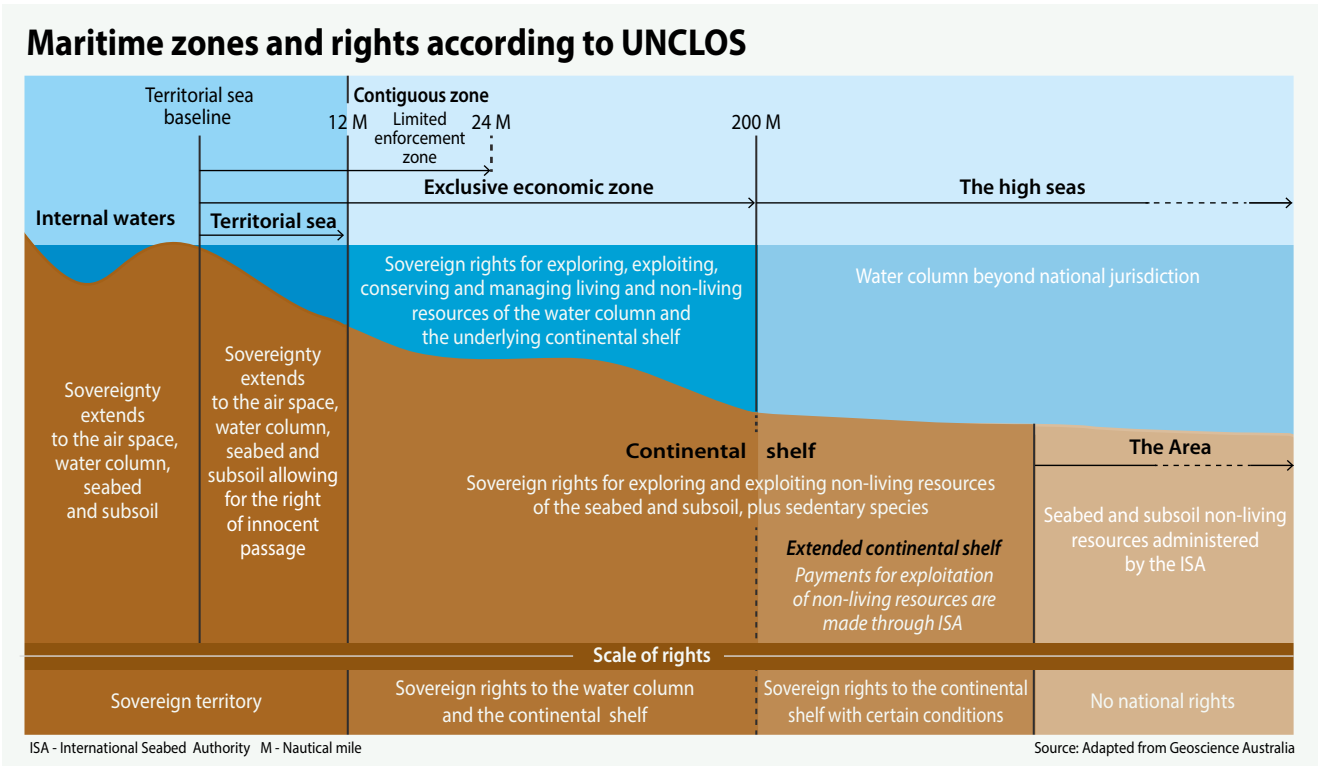
GRID-Arendal's Shelf Programme was established, with support from the Norwegian Ministry of Foreign Affairs, to assist developing States and small island developing States with submissions to secure rights to the full extent of their marine jurisdiction.

The maritime boundaries that define marine jurisdiction are complex and after nearly 60 years of international negotiations and national activity many States are now working to determine their outermost limit, which will help to finalise these boundaries.

According to UNCLOS, in some instances States can have rights to the continental shelf beyond the 200-nautical-mile exclusive economic zone (EEZ) – an area termed the

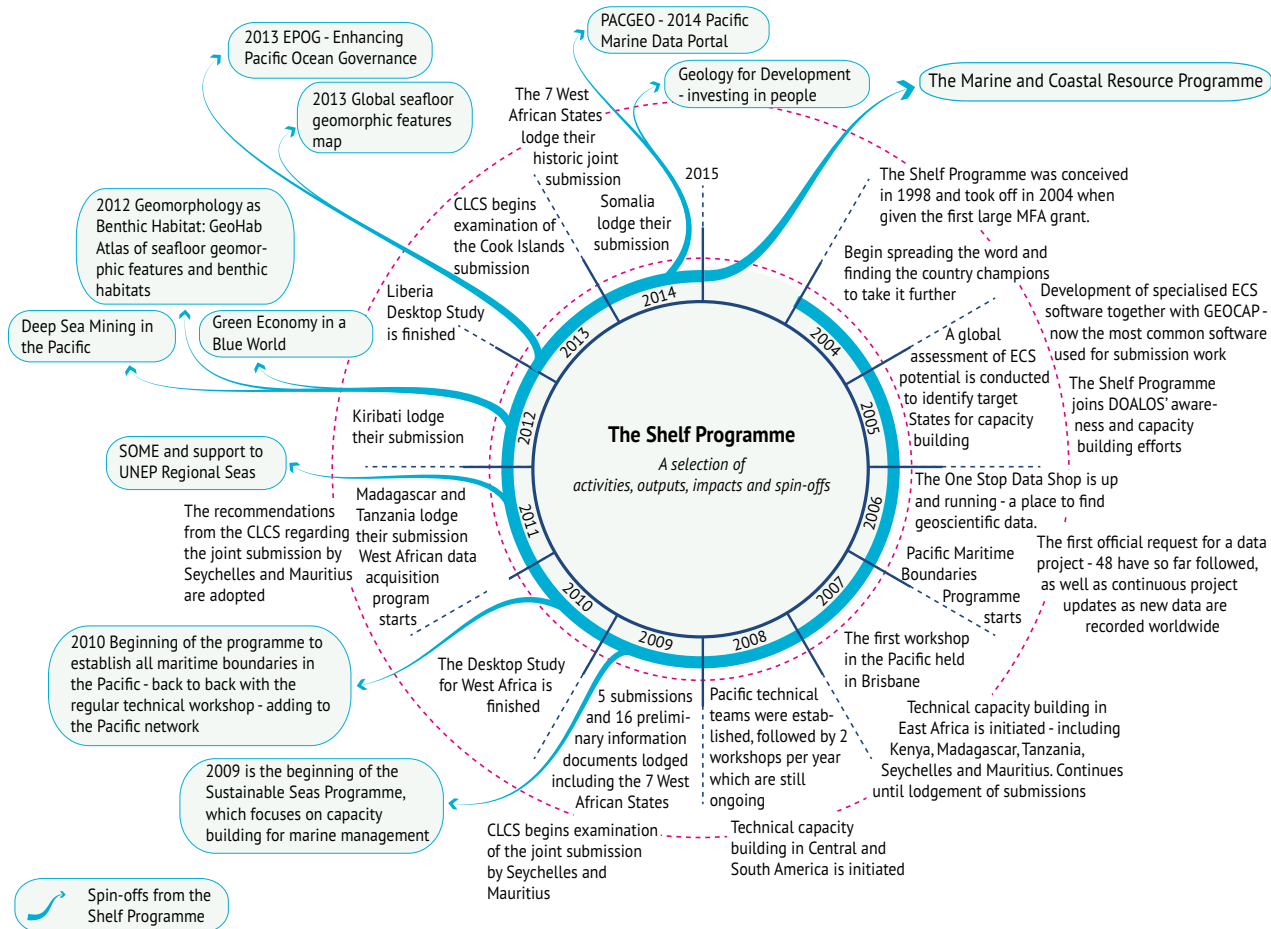
extended continental shelf (ECS). States are entitled to mine the “extended continental shelf” and harvest sedentary organisms living there. States may also undertake measures to protect the environment of their extended continental shelf. Future advances in extraction methods are expected to put many more of the seabed resources found in these deep- water areas within reach. This, combined with the requirements of signatories to UNCLOS to delineate the ECS, has been driving a global marine mapping effort.

Coastal States wishing to define an extended continental shelf must prepare a submission, containing geoscientific information and data on the shape and nature of the seafloor, to the Commission on the Limits of the Continental Shelf.



The Work of the Shelf Programme

Core activities, outputs, impacts and spin-offs during the last decade of the Shelf Programme



Many developing States and small island developing States have succeeded in lodging a submission for extended continental shelf and are now working towards finalising their marine jurisdiction. During the process, many of these States have had to build new capacity in a range of geoscientific and technical areas and the Shelf Programme has been there to assist.

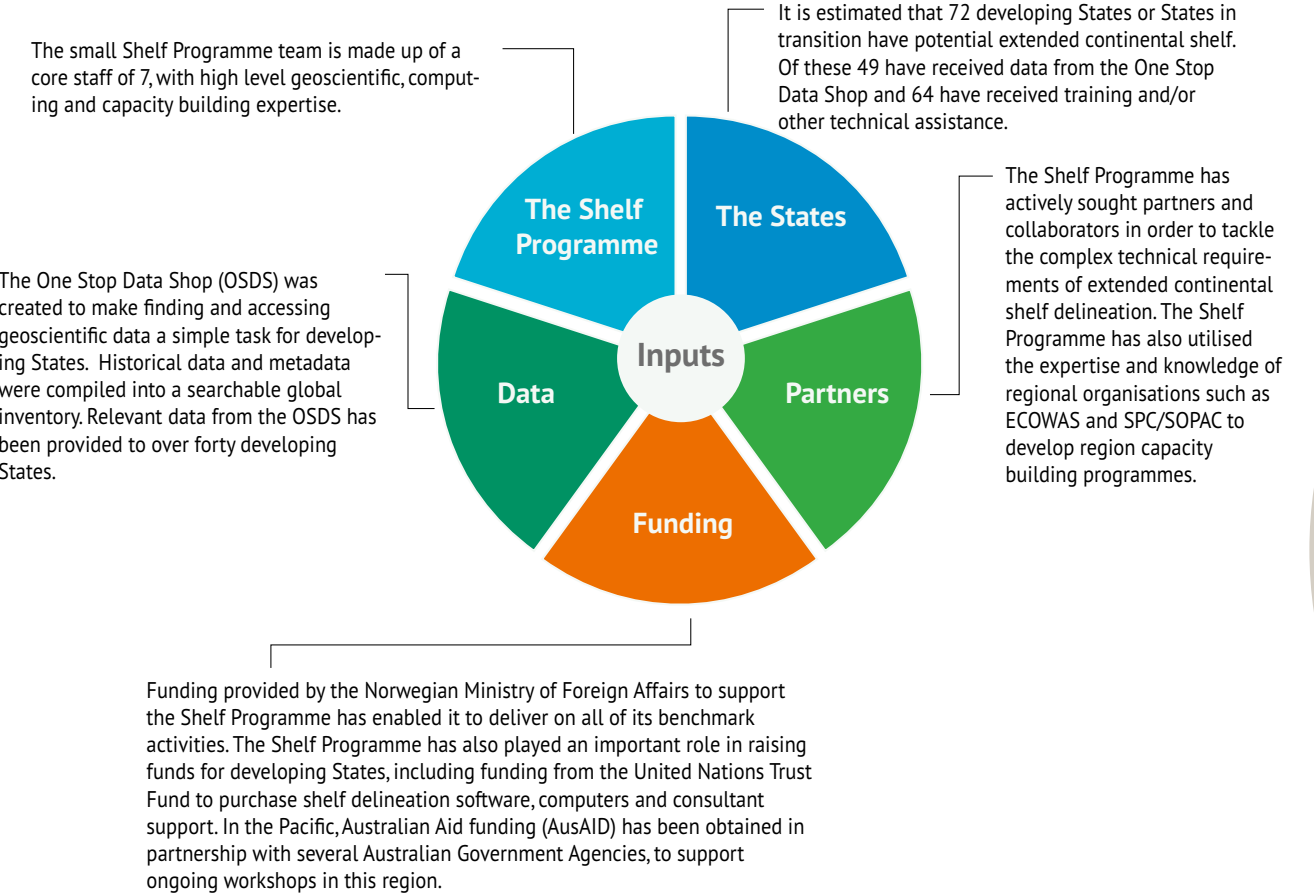
The multi-step capacity building process employed has resulted in a significant increase in local skills and knowledge, leading to the successful completion of submissions, as well as the development of important spinoff projects and programmes (see figure above).

The Components for Success

The Norwegian Ministry of Foreign Affairs has supported the Shelf Programme to engage with coastal States, collect and catalogue the necessary geoscientific data to support the submissions, and develop essential partnerships to

provide technical and scientific capacity building. This comprehensive approach has led to the success of the Shelf Programme in supporting developing States in delineating their ECS.

A multifaceted effort to support developing States



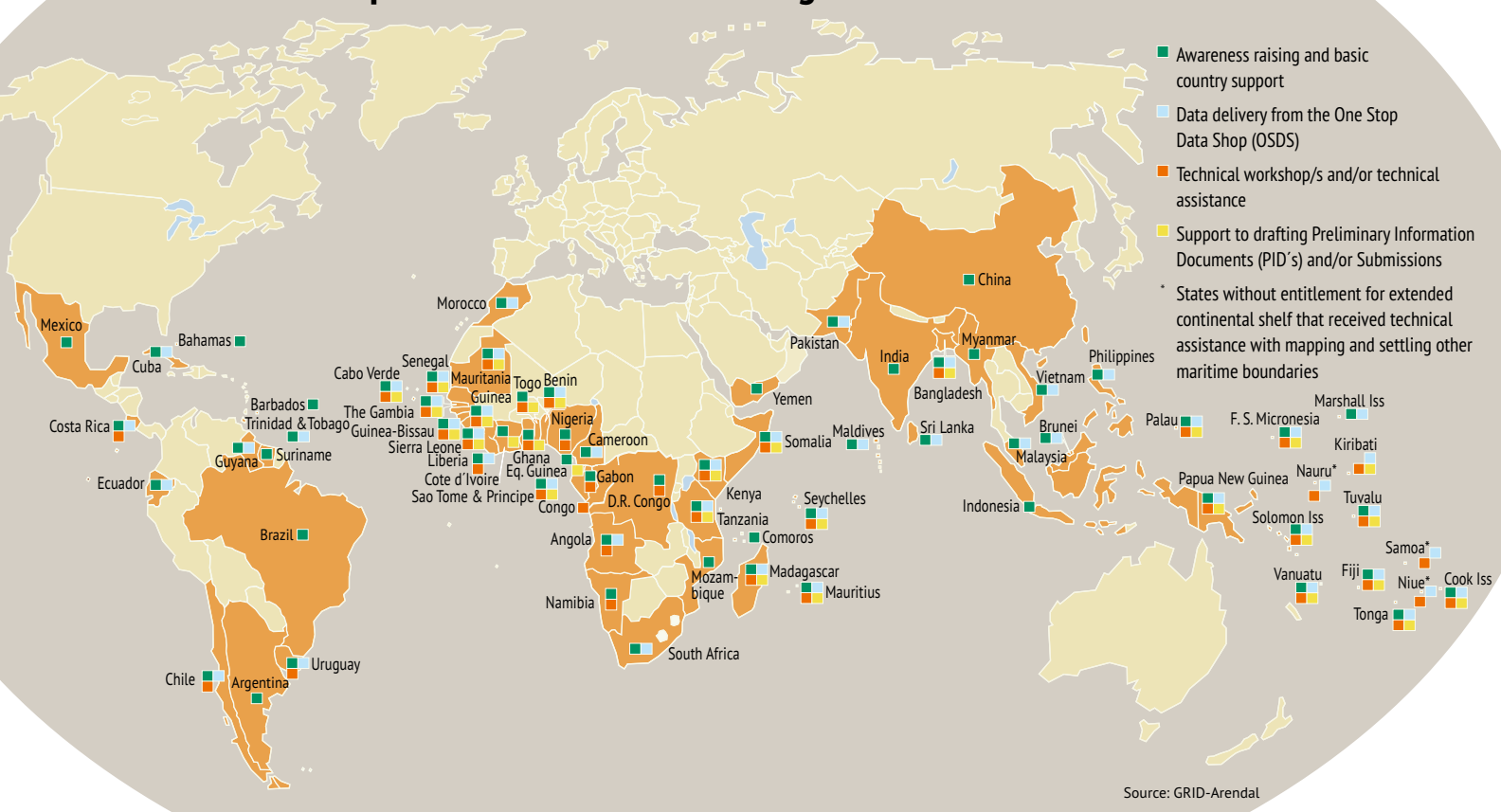
The States

The Shelf Programme engaged with the States on both a political and technical level, ensuring the development of ownership and appropriate support to complete the complex task of delineating the ECS. The governments provided technical staff to develop the submissions as well as political and diplomatic input that enabled decision making on the form of the submission. The technical engagement meant that the appropriate personnel were enlisted into capacity building activities while the diplomatic and

political input paved the way for coordinated data sharing between neighbouring States and many joint submissions.

Forty-nine States have received data from the One Stop Data Shop and 64 States have received training and/or other technical assistance from the Shelf Programme and its partners. In all, varying levels of assistance have been provided to 89% of developing States with potential for extended continental shelf.

Assistance provided under the Shelf Programme from 2004 to 2014



The Partners

The Shelf Programme has actively sought partners and collaborators, including regional organisations and experts from countries that have successfully completed submissions for extended continental shelf. This has allowed the Shelf Programme to build comprehensive regional capacity building programmes and provide the highest quality scientific data and information.

The large number of data holders that have joined with the Shelf Programme has helped establish the One Stop Data Shop as the most comprehensive inventory of geoscientific data and metadata available to developing States. The data holders all acknowledge that the best data is the data that is being used. By making their data discoverable they saved developing States millions of dollars and helped support an environment of collaboration and sharing.

Building solid partnerships			
Regional partners	Complimentary partners	Data providers to OSDS	
ECOWAS	CLCS expertise	UTIG	BGR
SPC/SOPAC	UN DOALOS awareness & capacity	WHOI	BSH
Geoscience Australia	ComSec legal support	ODP	Geoscience Australia
FFA	NMA baselines	NOC	GDC
AGD	BGR parallel coop	NIWA	LDEO
AGD - Australian Attorney Generals Department; BGR - Bundesanstalt für Geowissenschaften und Rohstoffe; BSH - Bundesamt für Seeschifffahrt und Hydrographie); ComSec - Commonwealth Secretariat; CLCS - Commission on the Limits of the Continental Shelf; ECOWAS - Economic Community Of West African States; FFA - Pacific Islands Forum Fisheries Agency; GDC - Geological Data Center which include Scripps Institution of Oceanography (SIO) data; LDEO - Lamont-Doherty Earth Observatory; IPGS - L'Institut de Physique du Globe de Strasbourg; IRFEMER – Insitut français de recherche pour l'exploitation de la mer; JAMSTEC - Japan Agency for Marine-Earth Science and Technology; JODC - Japanese National Oceanographic Data Center; NGDC - National Geophysical Data Center; NIWA - National Institute of Water and Atmospheric Research (NZ); NOC - National Oceanography Centre; NMA - Norwegian Mapping Authority; NPД - Norwegian Petroleum Directorate; ODP – Ocean Drilling Programme; SPC/SOPAC - Secretariat of the Pacific Community/Applied Geoscience and Technology Division; UN DOALOS - United Nations Division of Ocean Affairs and the Law of the Sea; UTIG - Institute for Geophysics, the University of Texas Austin and WHOI - Woods Hole Oceanographic Institution.	GEOCAP software	NGDC	IPGS
	NPD data acquisition	JODC	IFREMER
			JAMSTEC

The Funding

The Norwegian Ministry of Foreign Affairs has provided funding to the Shelf Programme since its inception. This regular ongoing support has enabled the Shelf Programme to effectively plan and develop very comprehensive capacity building activities in conjunction with scientific and technical personal from developing States.

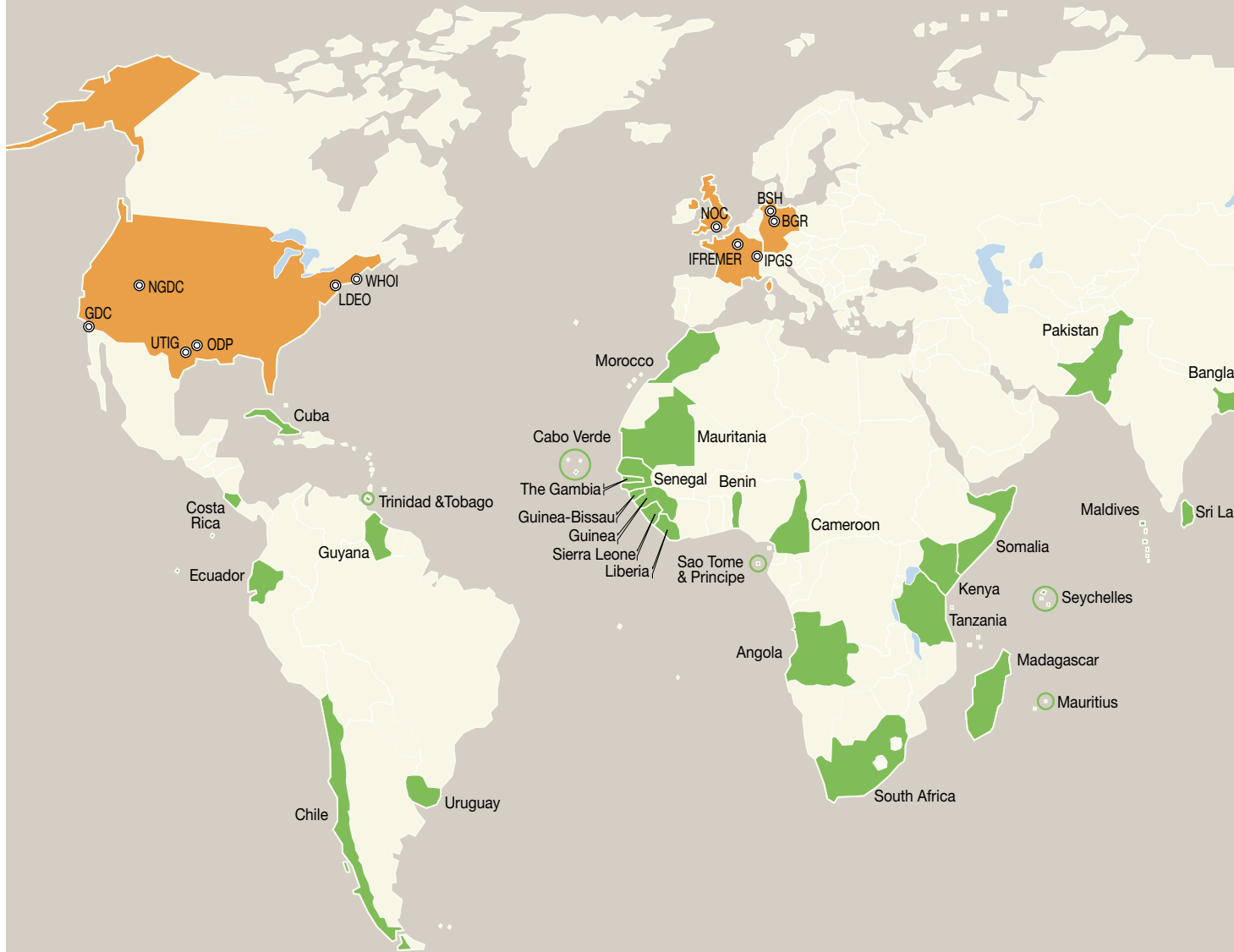
The funding and allocations of resources from the States themselves have also been important. In several cases the Shelf Programme has been instrumental in raising the necessary awareness for States to allocate internal resources to the extended continental shelf work.

Service offered to developing states by the Shelf Programme	
- free of charge	Funding: 9 Million NOK/year plus external
Awareness raising	
Proactively visiting states, taking opportunities to network and present information about UNCLOS and the extended continental shelf	✓
Early stage advisory services on how to set up an ECS task force	✓
Hands on scanning-phase workshops (capacity building)	✓
One Stop Data Shop	
Identifying and collecting data from various sources	✓
Providing publicly available data to developing states in an appropriate format	✓
Training in data handling	✓
Assistance with establishing national/regional data portals	✓
Storage of data locally	✓
Providing ECS project database to states for inclusion in the final submission	✓
Training	
Training in article 76	✓
Training in GEOCAP software (special developed software for ECS preparation work)	✓
In-house facilities for visiting ECS task forces	✓
Advisory services	
Advice on UN Trust Fund applications	✓
Advice on regional geology and development of base of slope arguments	✓
Advice on location of foot of slope points	✓
Advice on seabed mapping data acquisition	✓
Advice on submission process and format	✓

Source: GRID-Arendal

Providers and recipients of data from the One S

From beginning of the Shelf Programme to the end of 2014



BGR - Bundesanstalt für Geowissenschaften und Rohstoffe (Federal Institute for Geoscience and Natural Resources); BSH - Bundesamt für Seeschifffahrt und Hydrographie (Federal Maritime and Hydrographic Agency); GA - Geoscience Australia; GDC - Geological Data Center which includes Scripps Institution of Oceanography (SIO) data; IFREMER - Institut français de recherche pour l'exploitation de la mer (French Research Institute for Exploitation of the Sea); JODC - Japanese National Oceanographic Data Center; NGDC - National Geophysical Data Center; NIWA - National Institute of Water and Atmospheric Research; ODP - Ocean Drilling Programme; UTIG - Institute for Geophysics, the University of Texas Austin and WHOI - Woods Hole Oceanographic Institution

Stop Data Shop



Data – The One Stop Data Shop

At the inception of the Shelf Programme, it was recognised that access to the necessary geoscientific data would be one of the biggest stumbling blocks for developing States wishing to delineate their ECS. In response to this, the Shelf Programme developed the One Stop Data Shop (OSDS), which sourced relevant data and compiled it into a searchable global inventory. The OSDS now contains over 66 million km of survey data (equivalent to 1660 times around the earth or a one way ticket to Mars), which has been made available by 15 data holders. The OSDS provides a cost effective and simple mechanism for the distribution of data to developing States. Without the OSDS much of this essential historical data may not have been accessible.

The OSDS is now recognised by the global marine scientific community as a significant contribution to open data access and has lead to GRID-Arendal’s participation in new initiatives including the European Union’s EMODNET hydrographic project, the development of the Pacific’s PACGEO marine portal and the new seafloor geomorphology map <http://www.bluehabitats.org/>.

Successful Capacity Building

The foundations of the Shelf Programme's capacity building



The Shelf Programme has worked hard to build a sustainable network model to enhance the impact of capacity-building in the coastal States. All parties recognize the importance of strong local ownership of initiatives and the continued development of skills and knowledge that could generate and support national projects after the submissions were completed.

In order to successfully develop the technical skills and scientific knowledge necessary for States to complete the submissions for extended continental shelf, the Shelf Programme adopted a capacity building process focused on building a broad range of skills and fostering regional cooperation. The success of the regional cooperation has resulted in coordinated submissions between neighbouring States and the lodgement of a number of joint submissions, including the historic West African seven-State submission.

Spreading the Word

In 2006 the Shelf Programme began spreading the word about the possibility for coastal States to secure the rights to extend their maritime jurisdiction by documenting the characteristics of selected areas of the seafloor. In these early days there was a need to increase the understanding, within States, of the entitlement and process leading to the definition of the ECS.

- **Which offshore areas of the seafloor met the geological and morphological criteria to qualify as continental shelf beyond 200 M?**
- **What sort of data was required?**
- **What was the role of the CLCS?**
- **How would overlapping claims be treated?**

- **What happened if a State could not comply with the timeline?**
- **Was there funding available to support a State's endeavours?**
- **What skills were required in an ECS team?**

The Shelf Programme answered these and a myriad of other questions. It also provided preliminary analysis and background information necessary for many States to examine their situation (the scanning phase). With this new information, the prospect of delineating the ECS became a priority for many developing coastal States, who quickly established task teams to participate in the capacity building and technical training offered by the Shelf Programme.

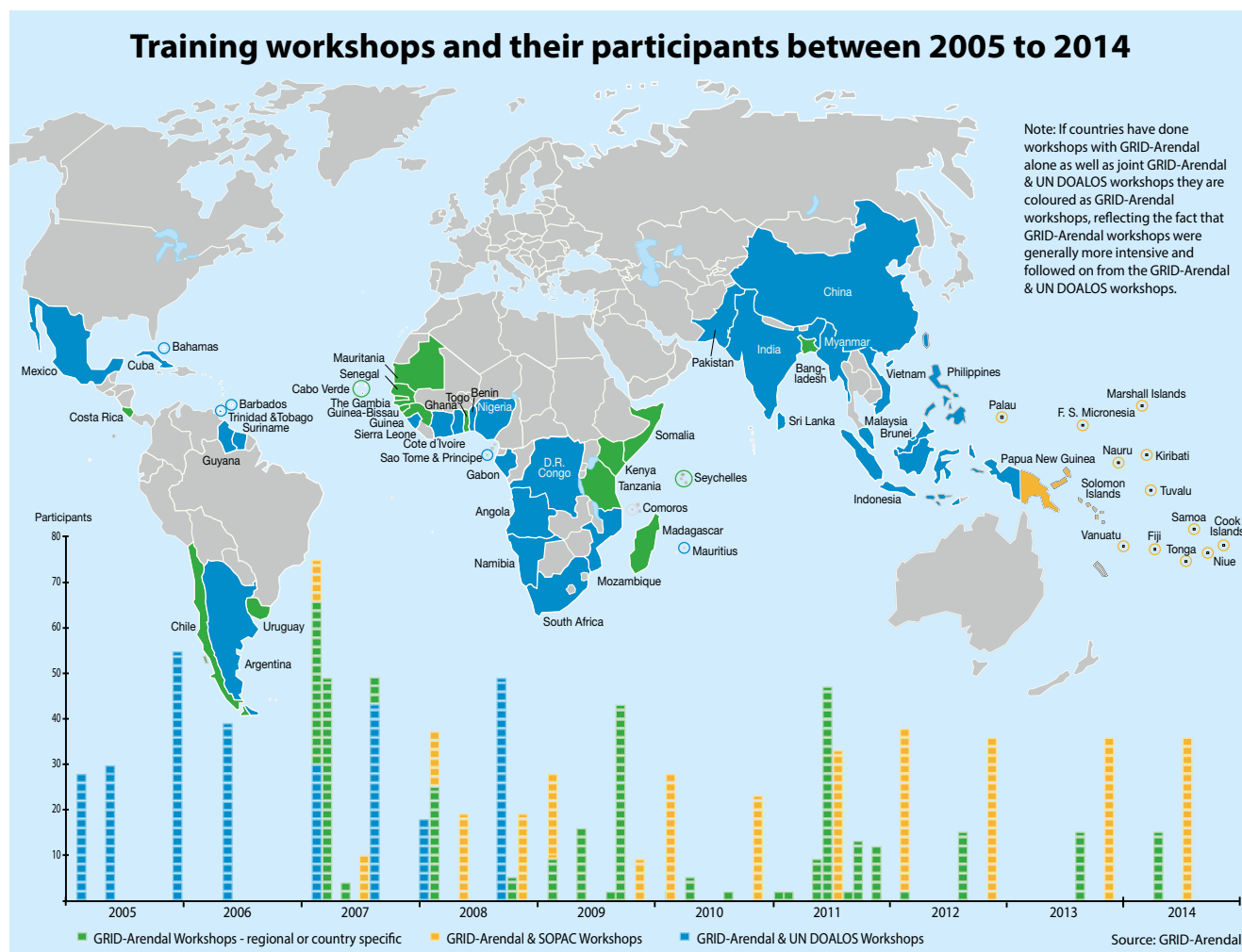


Awareness and capacity building workshop, Namibia, 2008

Workshops and Networks

A large and rewarding part of the work of the Shelf Programme has been providing training to the technical personnel from developing States. The Shelf Programme philosophy has been to train people to fully participate in the analysis of data and the preparation of the final submission documents. This has lead to full ownership of the process. It has also increased the number of technical experts with specific marine science skills related to bathymetry, seafloor geomorphology, geology, GIS and general computing as well as an increased understanding of the marine environment and the need for good governance.

The networks developed during the Shelf Programme capacity building activities, principally in East and West Africa and the Pacific, have built up a regional resource pool. The technical experts are continuing to work together on new regional marine projects, such as the Pacific Marine Minerals Project; the development of marine assessment capacity to support involvement in the United Nations regular process of marine assessment; and green economy for a blue world projects such as Blue Carbon.



The West African Network



"As a brief introduction, my name is Jerreh Barrow, and I am a geophysicist by profession and The Gambia's focal point for the Continental Shelf Project. I first encountered the Shelf Programme, in September 2008 in Windhoek Namibia. The training workshop was on the procedures and processes of delineating the outer limits of the continental shelf in accordance with article 76 of the UNCLOS. Since then I have interacted with the Shelf Programme team on many occasions.

Interactions with the Shelf Programme have not only enhanced the advancement of the target project, but also positively impacted my personal career development. At the national level, the interactions, kick-started a process (still going on) that will hopefully result in a submission on by The Gambia's Continental Shelf Project. It has reinvigorated our efforts and built momentum for our national committee. On the personal level, these interactions have increased my understanding of UNCLOS related concepts and hence broadened my experience. The programme has also served as a platform for networking with colleagues from different professions and countries. These experiences, I continued to share with colleagues and members of The Gambian national committee on continental shelf project."

Extract from a personal communication from Mr Jerreh Barrow, Assistant Director, Geological Department The Gambia and national focal point for Continental Shelf Project, 3 February 2012

The Pacific Network

The Pacific network includes the Shelf team, technical, legal and diplomatic personnel from 14 Pacific Island States and the partner organisations SPC/SOPAC, Geosciences Australia, the Australian Attorney Generals Department, the Pacific Forum Fisheries Agency and the Commonwealth Secretariat. Representatives from the group are engaged in the Australian Government funded Enhancing Pacific Ocean Governance project. This project is working toward the finalisation of the 48 shared maritime boundaries in the region including the development of modern maritime boundary legislation (in the last 4 years 15 have been resolved and many more are close to resolution), the development and deployment of a digital marine cadastre (see <http://pacgeo.org/>) and activities related to marine spatial planning.

"The first expanded Pacific Island boundary delimitation workshop has achieved more in these past two weeks, to progress the legal establishment of maritime boundaries in the region, than has been achieved in the past 25 years"*

Personal communication from Mark Alcock, Project Leader, Law of the Sea and Maritime Boundary Advice Project, Geoscience Australia

* this workshop, held in 2010 was a follow up to the previous ECS workshops which involved the nine Pacific Island states who have ECS claims. The expanded workshop brought together 14 Pacific Island nations to start the process of determining the many unresolved shared maritime boundaries in the region. The understanding of maritime boundaries developed during the ECS phase was an essential component in driving the sensitive shared-boundary negotiations.

Towards a New Map of the World

Defining the Extended Continental Shelf

Completing a submission for ECS is a multi step process, generally involving an initial assessment of potential ECS, followed by a more comprehensive desktop study sometimes highlighting the need for a data acquisition programme, and finally the completion of the submission documents in accordance with the Scientific and Technical Guidelines of the CLCS.

The Shelf Programme team completed a worldwide scanning assessment and desktop studies for states in the Pacific and West Africa. It also produced preliminary information documents (PIDs*) for states, furnishing them with the

completed document, or providing capacity building and training for the states to produce their own PID.

The Shelf team also assisted West African states with the collection of geoscientific data. The data acquisition, funded by the Norwegian Government, included the deployment of six different types of seafloor and sub-sea-floor imaging equipment and resulted in over 20,000 km of survey information. In the Pacific the maritime boundaries network, which includes the Shelf Programme, assisted Papua New Guinea and the Cook Islands in designing data acquisition programmes.

*PIDs were submitted to the Secretary General of the United Nations by developing states that were not in a position to complete a final submission within the stipulated 10-year period, concluding in May 2009 for many states. The PID documents generally contain a morphological and geological description of the margin, preliminary information indicating the limits of the outer continental shelf, a description of the status of preparation and the intended date on which the final submission will be made.



Professor António Filipe Lobo de Pina from Cabo Verde was one of 8 observers from the West African States who joined the boat during data acquisition in 2011/2012. Here he is holding a Sonobuoy instrument.

Defining the outer continental shelf

- from test of appurtenance to full submission

Task 1 - Does the continental margin extend beyond 200 M?

If **no**: the outer most limit will automatically become 200 M

If **yes**: next step, an internal Desktop study

Task 2 - the Desktop Study

- Source data, utilising the One Stop Data Shop
- Identify specialist GIS software
- Analyse available data and develop possible ECS scenarios
- Determine if the available data supports the argument for ECS
- If more data is needed an acquisition plan can be developed and costed
- Identify further required resources and funding sources

If **enough** data: the full submission can be written and lodged

If **enough data** for some of the area: a partial submission* can be written and lodged

If **not enough** data: continue to Task 3

Task 3 - Acquire data and incorporate it into the project

- Re-analyse all data and examine the previously developed ECS scenarios
- Determine if data is now sufficient to support the argument for ECS

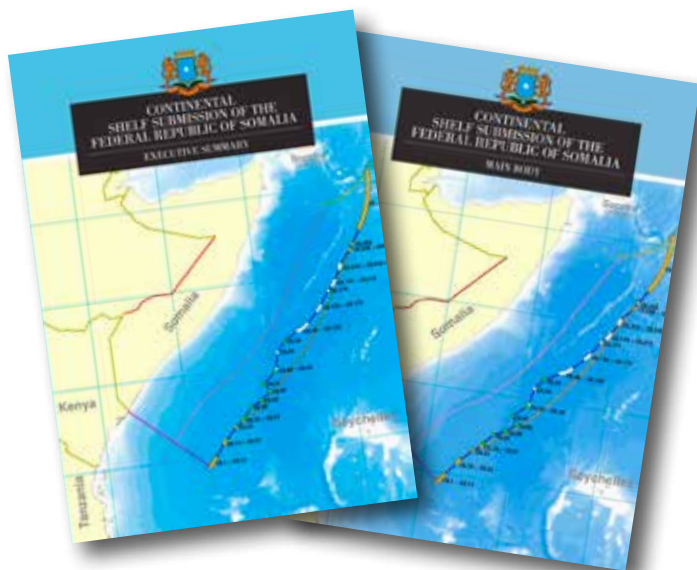
If **no**: go back to Task 2 (acquisition plan)

If **yes**: the full submission can be written and lodged, securing a place in the queue for review by the CLCS

* there can be other reasons to make a partial submission

Final Submission Documents

In addition to data and technical training provided to states, the Shelf has assisted in the production of final submission documents for some states (e.g. Papua New Guinea, Palau, Federated States of Micronesia, Solomon Islands, Cook Islands, Vanuatu, Tuvalu, Kiribati, seven West African states and Somalia). In almost all cases the completion of the final submission documents has been undertaken with the technical team from the states and partner organisations. However, the submission detailing the extended continental shelf of Somalia was carried out jointly by the Royal Norwegian Ministry of Foreign Affairs, the Norwegian Mapping Authority, the Norwegian Petroleum Directorate and GRID-Arendal.



West Africa

The Shelf Programme assisted seven West African States, Cabo Verde, The Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal and Sierra Leone in the preparation of a joint submission. The collaboration began in 2010 and included 6 technical workshops and a comprehensive data acquisition programme.

At the last technical meeting, in Cabo Verde in 2014, it was acknowledged by all seven states that the training provided and data and information collected over the

4-year period constituted an exemplary capacity building programme, one that will provide a foundation for long term benefits to the region.

The sub-regional cooperation was initially made possible by the commitment and energy of the late Norwegian Ambassador, Hans Willhelm Longva. Unfortunately Ambassador Longva did not witness the historic decision made by the seven states to lodge a “joint” submission – a triumph of regional cooperation in West Africa.



His Excellency Mr Fernando Jorge Wahnnon Ferreira, accompanied by representatives of the 7 West African States, hands the completed joint submission to Ms Gabriele Goettsche-Wanli, Director of DOALOS (New York September 25th 2014)

Completing the Task and Taking it Further – The Marine and Coastal Resources Programme

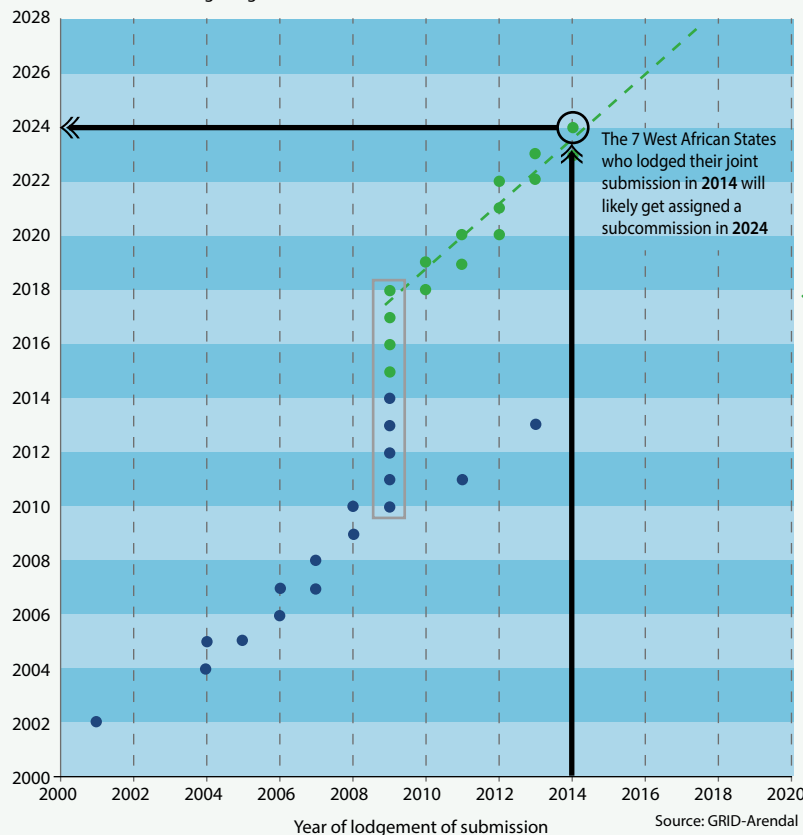
Many of the developing States and small island developing States that have worked with the Shelf Programme have identified the need for ongoing support following the lodgement of their submission for ECS. This is because finalising maritime boundaries is a complex process and lodging a submission is only one of the tasks involved. In the first instance, States have to face a review of their submission by the CLCS. They have to be able to defend the placement of their outermost ECS boundary, which depending on recommendations from the CLCS, may involve finding additional

information and data or re-analysing and interpreting previously submitted data. Many of the States that have so far defended their submissions before the CLCS have had to make changes to their outer (most) limit positions in response to the Commission's recommendations.

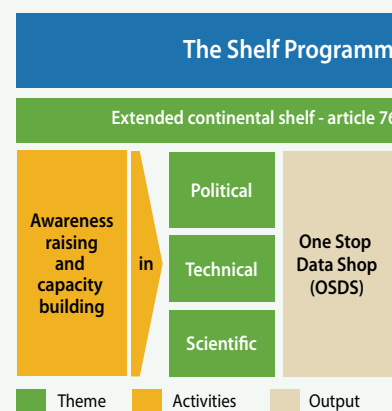
Being prepared for the submission defence requires States to maintain their technical capacity, keep abreast of decisions by the CLCS that may effect interpretation of their ESC boundary and incorporate any new data that

Expected waiting period from lodging a submission to review

Year of a submission being assigned a subcommission



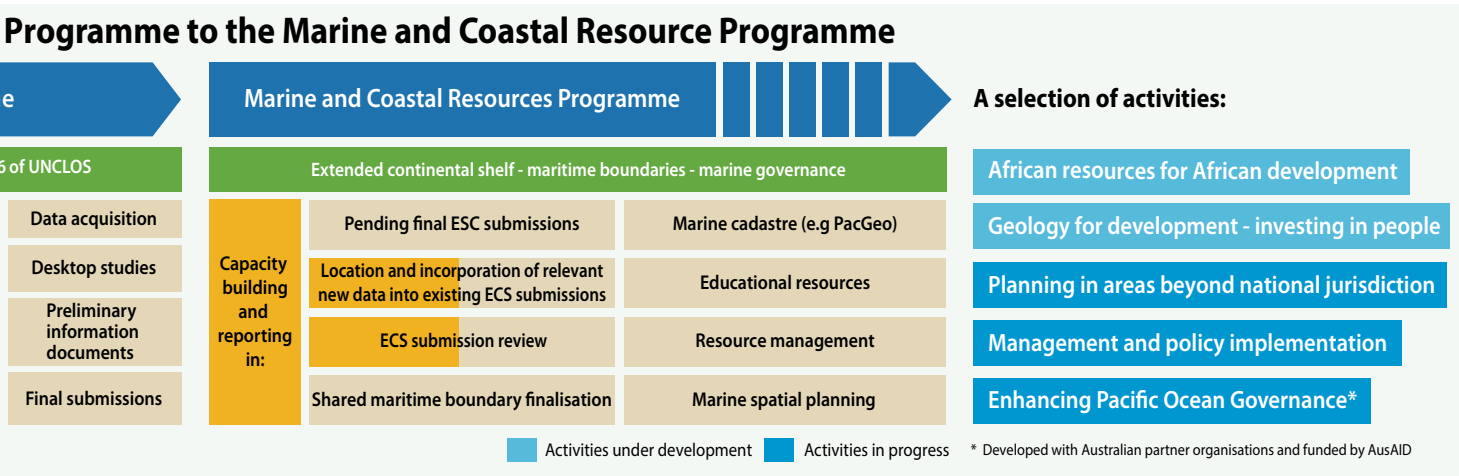
Transition from the Shelf



may become available. There is a long queue of submissions waiting for review and some States may have many years before they reach this stage – time in which key people may move on, and understanding of the submission may be lost or diluted. In reference to the figure opposite, for example if a State lodged a submission in 2014 it is estimated that their submission review will begin in 2024. It is therefore essential that awareness and capacity are maintained during the intervening period – but it need not be a period of standing still, as the final goal of maritime

boundary delimitation provides an opportunity for developing improved ocean governance.

The Marine and Coastal Resources Programme aims to continue to support States with the tasks remaining in finalising their maritime boundaries. The strong partnerships, networking and collaboration already established are also being expanded to build capacity and engender positive change in the governance and management of the marine environment.



Testing the submissions

As the CLCS progresses in the review of the submissions lodged so far, the first developing States to lodge submissions are now starting to be assessed and concrete outcomes of the capacity building and technical assistance provided by the Shelf Programme are beginning to be realised. The Commission has finalised recommendations on the joint submission of Mauritius and the Seychelles. The recommendations support the ECS boundary defined by the two countries. This is a great result for two small island nations and validates the role of the Shelf Programme in providing data and technical capacity building.

Closing the Gap

As the new global map of maritime jurisdiction takes shape, there are still some States that are working on submissions for ECS. These include States that are transforming PIDs into full submissions and States that were later signatories to UNCLOS* and so still have time to make a submission.

It is essential that all States finish the job and permanent maritime boundaries are established. Until finalised the management of marine space and the development of resources remains uncertain. Establishing ownership of these areas and associated resources may be crucial for the wellbeing and political stability of coastal States. Until these “gaps in the world map” are closed, coastal States may not be in a position to fully protect their interests or move forward with development plans.

* States that became a party to UNCLOS prior to 13 May 1999, had until 13 May 2009 to make a submission. States that became a party after 13 May 1999 have 10 years from the date of ratification to file their submission. Similarly, states that lodged PIDs prior to 13 May 2009 have additional time to make a submission.



Participants at a workshop in the Seychelles in 2008 working on an ECS training project, using the GEOCAP software to determine the base of slope and foot of slope points.

Progress of remaining States towards a full submission*

	Data project from OSDS	Desktop study	Preliminary information document	Partial submission	Full submission
Africa					
Morocco	✓				
Western Sahara					
Liberia	✓	✓			
Togo			✓		
Benin	✓	✓	✓		
Cameroon			✓		
Equatorial Guinea	✓		✓		
São Tomé & Príncipe	✓		✓		
Congo			✓		
D.R. Congo			✓		
Comoros			✓		
South America					
Costa Rica	✓	✓	✓		
Ecuador	✓				
Chile	✓	✓	✓		
South Pacific					
Solomon Islands	✓	✓	✓	✓	
Vanuatu	✓	✓	✓	✓	
Fiji	✓	✓	✓	✓	
F.S. Micronesia	✓	✓	✓	✓	
Papua New Guinea	✓	✓	✓	✓	

* Based on the information available to the Shelf Programme

Source: GRID-Arendal



GRID-Arendal recently collaborated with SPC/SOPAC to produce the Pacific Islands deep-sea minerals assessment, in preparation for possible marine mining in the region. Key themes addressed included, a review of the geology of deep-sea marine minerals, an examination of potentially adverse environmental impacts of improperly regulated development and, an examination of the socio-economic benefits and consequences of marine mineral resource development. This assessment was a global first and very successfully utilised the Pacific network and technical capacity developed with the Shelf programme, in both understanding the geology of the Pacific seabed and highlighting the states legal obligations for seabed resource development outlined in UNCLOS.

African Resources for Africa

The network of the seven West Africa states has developed a project for future activities. Called African Resources for Africa, the programme builds on the solid foundation of expertise and knowledge gained during the preparation of the ECS submission.

The project is a multifaceted, structured collaboration, focused on the development of learning resources and training related to data and information management, resource management, and ocean governance. The project supports the strategy of the Abidjan Convention, endorsed by member countries to develop marine resources and enhance management capacity.



The Experts of the West African Liaison Committee who were behind their historical Joint Submission. The Liaison Committee was led with excellence by Cabo Verde's Director General for Global Affairs Mr. Carlos Semedo and Ambassador Hans Wilhelm Longva (First row, 1st and 4th from the right).

The next decade – oceans of possibilities and responsibilities

For most States engaged in determining their outer limits, the finalisation of this particular boundary was perhaps not the highest priority – the ECS being far from land and generally beyond a State's current economic activities. However, the focus on maritime boundaries provided by the ECS work has inspired many of the States working with the Shelf Programme to address the much more pressing problem of finalising their baselines and other maritime boundaries such as the EEZ.

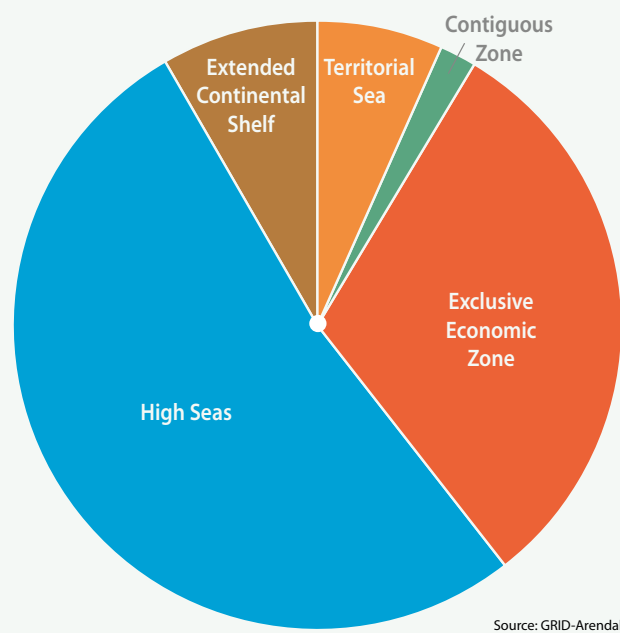
Through the ECS and associated work States are building the framework of defined boundaries with modern legislation necessary for the effective management of the marine environment. This development would likely have been many years in the future if it were not for the impetus provided by the ESC work.

One of the most valuable outcomes from the work of the Shelf Programme over the last 10 years has been the development of a committed maritime boundaries community across the Pacific and Africa with the skills, knowledge and motivation to undertake this work. The cross border cooperation and the friendships that have developed amongst the ESC teams, has led to many historic decisions. These experts, working with the Shelf Programme and partners, have developed ambitious programmes to establish maritime boundaries, including shared boundaries, and other projects related to improved ocean governance (e.g. EPOG and African

These spinoff projects take the delineation of the ESC from an academic exercise to a foundation for developing States taking independent decisions on resources, environmental management and marine surveillance.

Ocean under national governance

- close to half of the world's maritime space



Resources for Africa). These spinoff projects take the delineation of the ESC from an academic exercise to a foundation for developing States taking independent decisions on resources, environmental management and marine surveillance.

When all the maritime boundaries are finalised, coastal States, including many developing States and small-island developing States, will be custodians of almost half of the global ocean. Faced with the potential impacts from global change, including climate, increased resource use and population dynamics, maintaining ocean health will continue to be a growing challenge. It is encouraging that the developing States that have been working with the Shelf Programme and partners, are stepping up to this challenge.

High praise from Norwegian Government for the achievements of coastal developing states

First of all, let me congratulate Cabo Verde, The Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal and Sierra Leone on making this joint submission to the Commission on the Limits of the Continental Shelf. This is an historic event, which I am personally pleased to witness.

The joint submission is the result of a lengthy and successful process. The cooperation was initiated in 2008 at the request of the Commission of the Economic Community of West-African States (ECOWAS) and as a response to a call in United Nations General Assembly Resolution A/RES/63/11. Over the following years, this sub-regional cooperation grew to include several regional agreements, national commissions, regular joint technical workshops, a Liaison Committee of Government officials, as well as joint acquisition of seismic and bathymetric data. The decision to make this joint submission was taken at a Ministerial Meeting in Praia on 10 June 2014.

Norway has provided technical and financial assistance to this program, and we have thus had the opportunity to follow the progress closely. I am impressed by the efforts, skills and professionalism demonstrated throughout the process by the people involved in the project in each country.

In the words of Secretary-General Ban Ki-moon, the Convention on the Law of the Sea is “a firm foundation – a permanent document providing order, stability, predictability and security – all based on the rule of law.” I am convinced that this joint submission is a major contribution to the long-term stability and security in West-Africa. The States involved set an important example for other coastal states in implementing their obligations under the Law of the Sea Convention as regards the outer limits of the continental shelf in this spirit of cooperation.

Norway has been able to utilise its continental shelf resources as the basis for economic growth. I am glad that we through this project have been able to draw on Norwegian experience and expertise for the benefit of our partners in West-Africa. My hope is that this joint submission will have important development implications for future West-African generations.

In closing, let me extend my thanks to each and every expert on the West-African and Norwegian side who through their commitment have made this cooperation possible.

Speech given by Margit F. Tveiten (Director General) at the lodgement ceremony for the West African Joint submission at the New United Nations New York, September 25, 2014

Seven West African coastal states have submitted documentation on their continental shelf to the Commission on the Limits of the Continental Shelf in New York, in order to secure their maritime rights. Norwegian expertise on the Law of the Sea has made this possible.

Since 2008, Norway has assisted these countries in collecting and analysing data, has made its expertise available and has helped complete the documentation that is necessary to establish that the continental shelf of these West African countries extends beyond 200 nautical miles from the baselines.

‘This is an example of effective aid. The results have been achieved through African ownership, regional cooperation and Norwegian support,’ said Foreign Minister Børge Brende.

‘It is a historic milestone when seven developing countries with meagre resources work together to document the outer limit of their continental shelf. Although some unresolved delimitation issues and political differences remain, these countries agree that it is important to work together in relation to the Law of the Sea. The process of cooperation and the results achieved are an important contribution to security and stability in this unstable region,’ said Foreign Minister Børge Brende.

Extract from the press release issued by the Norwegian Foreign Minister, his Excellency Mr Borge Brende, October 10 2014

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