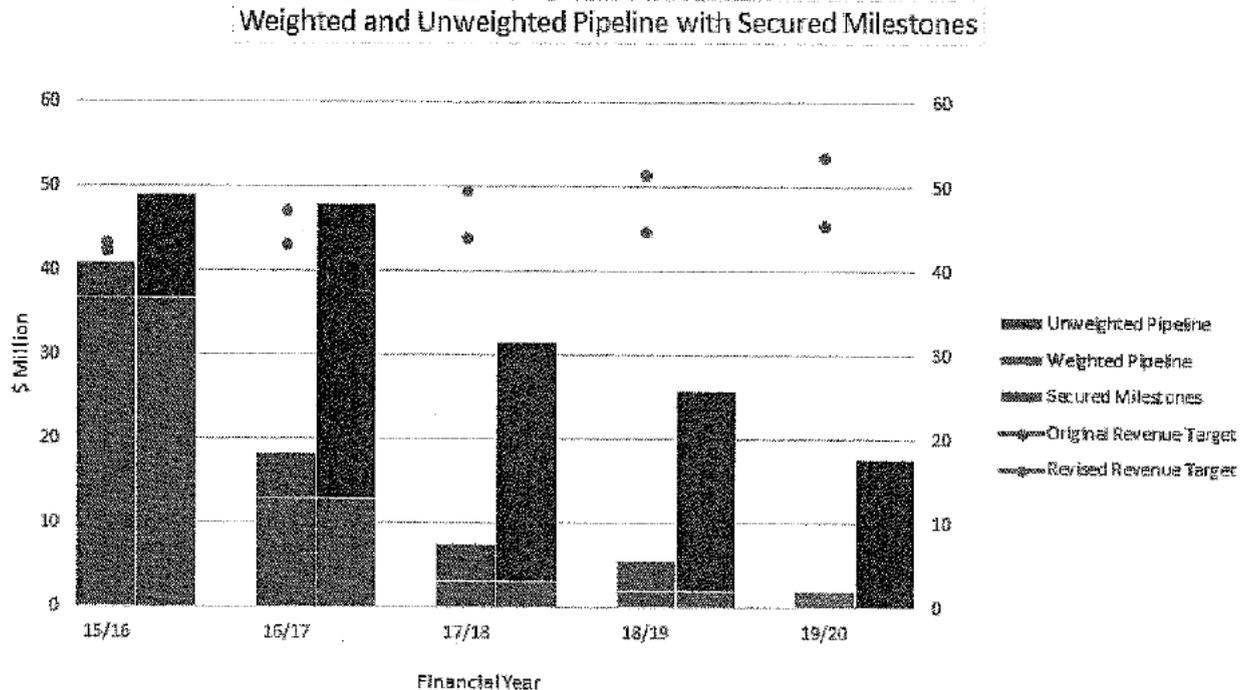


Handout for Deep Dive Discussions

Oceans and Atmosphere Business Unit

1. Business Unit Pipeline Health



Commentary notes:

The BU will likely reach its original target in 15/16 year but will fall short of revised target. Currently, 85% of revenue (revised target) is secured for this financial year and 12% (revised target) is in pipeline as a weighted value. Performance of individual programs shows normal variability, with two expected to significantly exceed external earnings targets and three currently below.

The situation is anticipated to improve as new projects are coming on line:

- S7 to ramp up in 16/17 but weighted in the weighted pipeline data.
- ESCC NESP hub to ramp up in 16/17 and weighted in the pipeline data

Changes in government funding for climate research (ACCSP wind up and AUSAID claw back) have impacted on RP1 and RP2 who have traditionally relied on these funds to shore up their pipeline. New funding sources such as the Green Climate Fund (GCF) and other anticipated initiatives from the Paris Climate Conference may assist towards some financial recovery beginning in FY 16/17.

2. Big growth opportunities

Oceans and Atmosphere have developed a strategy for sustained growth in external earnings that will enable us to reach the \$54 million target set for 2019/20. This will see incremental increases in our external revenue over the next 4 years. This will be achieved through realignment of our capability to:

- Expand the use of current methods and tools in new markets;

- Develop new methods and tools for application in existing and new markets.

Three growth areas to bring in **additional** external revenue have been identified:

Integrated Assessments for the Blue Economy – this explicitly couples socio-economic and biophysical considerations. It will require innovative complex systems approaches. It is an area of enormous international focus. Specifically it includes dealing with the “wicked” problem of managing multiple uses, spatial planning, cumulative impacts and Social License to Operate (SLO). Target markets are industry and governments in Australia, Asia/Pacific, Canada, the EU and Chile. It is anticipated to deliver additional revenue of up to \$15 million over the next 5 years.

Customers: governments, World Bank, IMF, philanthropic foundations, oil and gas sector, aquaculture industry, specifically:

- AcuoPacífico - Integrated Assessments in Chile
- Spatial planning and livelihoods in Pacific Island Nations
- Cross BU initiative on SLO
- Ecosystem based management in the EU

Oceans and Atmospheric Intelligence - this area will deliver “*tailored services for customers*” related to water and air quality, multi-week, seasonal and multi-year forecasting of industry-specific parameters to our climate-exposed economy, using a variety of models, incl. the Australian Community and Earth System Simulator. There will be a clear focus on a variety of sectors, e.g. offshore operations, hazard and emergency response, and disaster risk management. It will build on the game changing Bluelink and eReefs approaches and a significant output in Australia will be an analog of Bluelink/eReefs for the coasts. Target markets include Australia and Chile. It is anticipated to deliver additional revenue of \$10 million over the next 5 years.

Customers: oil and gas sector, aquaculture industry, finance and insurance industry, specifically:

- Continuous Water Quality Monitoring, scenarios for Great Barrier Reef, QLD Middling Centre - Coastal Intelligence
- Green Climate Fund, RDCs and R&D for Profit: information and services supporting sustainable resilient development in Pacific Small Islands Developing States, Australian and international primary industry
- the eco and geo-engineering sector
- China interaction with the National Laboratory for Marine Science and Technology

International Fisheries – this area will apply methods developed in Australia (e.g., Atlantis, harvest strategies) to fisheries in Chile, and the Asia-Pacific. It will also see the roll out of new genomic and remote sensing methods in international fisheries. The latter will focus on biomass estimation, chain of custody and provenance, and mitigating illegal, unreported and unregulated fishing activities. Target markets are Chile, the Asia Pacific and Indian Ocean Rim. Anticipated additional revenue is \$15 million over the next 3-5 years.

Customers: international fishing and aquaculture industries, governments, philanthropic foundations, specifically:

- Towards rebuilding Chile’s fisheries
- Indian Ocean Tuna Commission (IOTC)/EU/FAO stock structure tunas and sharks
- Allen foundation – use of satellite tracking to monitor illegal fishing
- Application of Close Kin mark recapture to global tuna fisheries
- Application of gene SNPs technologies to chain of custody and provenance.

In addition we note that:

China is a strategic focus for the business unit. A number of LOIs and MOUs have recently been signed (e.g., Chinese Academy of Sciences, State Oceanic Administration, Ocean College, Zhejiang University, etc.). Serious consideration is being given to establish an office in Qingdao – China’s emerging centre for marine science and technology. While external revenue will be modest in the short term (1-2 years), it is expected to increase with the establishment of joint collaborative programs with government and private sector industries.

Offshore oil and gas – given the downturn in the industry, conservative demands to address knowledge gaps from the regulators, and limited funding available from oil spill response agencies, external earnings are anticipated to be flat over the 4 year period. Our focus will be on continuing building relationships

with industry, regulators and spill response agencies to set the BU up for increased revenue in the medium term. Opportunities in metocean services, marine noise, decommissioning and operational discharges are also being explored – in addition to international opportunities under industry led joint venture partnerships.

Several capability and structural opportunities are currently being considered.

A focus on **Climate Services** will see a shift in capability-focus in Programs 1 and 2 from climate change research to meet the growing demand for services for farmers, resource managers, and industries, leading to more efficient primary sectors. Target markets are industries, governments, and EPAs. It is anticipated to deliver over \$20 million over the next 5 years, partially offsetting declines in government funding for climate change research. To realise this it will be necessary to re-shape our existing programs under RP1 and RP2. A reduction in FTEs that are not aligned to these directions is being considered. Two options are provided for the ET's recommendation:

- I. Reshape RP1 and RP2 to better align with our strategy of “tailored services for customers” and international business opportunities, especially in China.
- II. Merge both programs after reshaping of capabilities.

RP5 (Engineering and Technology) has a focus on marine infrastructure delivery. While it currently has strong external earnings, it is primarily funded by a small number of large clients (MNF and IMOS) and its core deliverables are not aligned with CSIRO's KPI metrics. Three options are provided for the ET's recommendation:

- I. Maintain the status quo
- II. Disband the program and distribute the capability across the remaining four programs in O&A.
- III. Revise CSIRO KPI's as they are not aligned with the operational framework of RP5.

3. Recommended Portfolio investments shifts

a) 20% Increase in Appropriation Funding:

Focus on 3 or 4 growth and emerging areas described above - would generate a high external earning revenue trajectory. We would proceed with the planned capability reshaping accordingly, and redirect resources to these growth areas.

b) 20% Decrease in Appropriation Funding:

This move would cut into areas which are part of our growth and/or emerging areas, i.e. require a cut to our external targets. Loss of core scientific expertise will impact the capability of the BU to respond to emerging challenges and financial growth opportunities. This option should only be treated as a last resort.

Support of redundancy measures to support capability realignment.

The Business Unit is requesting permission and financial support to action 30 redundancies to release capability that is no longer in demand or consistent with O&A's Strategic Plan. To meet our new external revenue targets there is a need to stop projects with little customer demand/low ROI potential (e.g., in capability areas like base-line climate change research, plankton ecology and Earth system assessment). Similarly, we will hire staff with the capability required in specific (growth) areas linked to customer need, scientific impacts and financial growth.

4. Other issues

Cross-BU opportunities: implementation of growth areas offers opportunities for cross-BU collaboration to maximise customer satisfaction and revenue. Examples are:

- O&A's coordinating role in addressing industry-community impacts and social license to operate (Data 61, L&W, Agriculture etc.);

- Expanding environmental assessments to include other BUs, e.g. Manufacturing. O&A would do the environmental assessments of tools and processes developed by Manufacturing.

International: corporate CSIRO and O&A need to actively consider how O&A can operate in EU and China with expected significant returns on investments (overcome organisational hurdles, clarify taxation issues etc.).

Publicly Funded Research Agencies: explore potential for revised relationships and increased collaborative revenue under proposed new bilateral collaboration agreements with GA, BoM, AIMS etc.