

Fishackathon is an epic, global hackathon to help make Earth's waters, aquaculture, and fisheries more sustainable & equitable.

**Dates: Auckland 10<sup>th</sup> and 11<sup>th</sup> February 2018**

**To register:** <https://hackernest.com/events/auckland-new-zealand-fishackathon-2018>

**For a full list of Fishackathon challenges:**

<https://docs.google.com/document/d/1Rv7dmlvJyXxqkDgcvh8iG2kVPkzJ7Ee5TgG4ddDJi9U/edit>

As part of fishackathon 2018 – GIFT will be posing a Hauraki Gulf specific challenge for participants to solve. We will be offering a \$1,000 USD prize to the team with the best solution.

### **Hauraki Gulf Challenge:**

The question's focus is on Sustainability. However, it promotes sustainability using market-based incentives.

#### **Title:**

Taking less but making more

### **Snapshot:**

Discarding of unwanted commercial fish catch can affect the health of fish stocks and marine ecosystems. There is a need for a tool that connects fishers and those receiving fish for sale with markets on a global scale in real or near-real time, to facilitate market placement of what would otherwise be discarded fish catch. This will reduce waste and overharvesting, facilitate fishers earning the same income for less total catch, and promote reporting of landed catch which enables effective fisheries management.

### **Challenge Statement:**

The Hauraki Gulf, also known as Tikapa Moana and Te Moananui à toi, is a taonga that is ailing as a result of human activity. The 2014 State of Our Gulf Report, published by the Hauraki Gulf Forum, states "Thousands of tonnes of fish and shellfish are extracted from the Gulf every year by both recreational and commercial fishers. Fishing occurs in most parts of the Gulf and has one of the greatest influences on its marine ecosystem." It is also noted in the Marine Spatial Plan for the Hauraki Gulf (Sea Change Tai Timu Tai Pari) "Scientific estimates of the total biomass in the Hauraki Gulf Marine Park, based on modelling commercially fished "mobile" species, indicate that the Hauraki Gulf Marine Park currently

supports less than half of the biomass present in 1925...Overharvesting of fish has had a significant impact on the mauri and ecological health of the Hauraki Gulf Marine Park”.

Rebuilding of biodiversity and fish stocks is a key goal of Foundation North’s GIFT (Gulf Innovation Fund Together) programme.

Discarding of unwanted catch from commercial fishing vessels is a global fisheries management issue that is complex to solve. Discarding can affect the health of fish stocks and broader marine ecosystems. Further, where discarded catch is not reported, it cannot be accounted for in fish stock assessments used for fisheries management. Discarding also represents the unwarranted waste of an important source of consumable marine protein.

In New Zealand, there has been significant media, stakeholder and government attention on the extent of both legal and illegal discarding. This practice is particularly poorly documented in smaller scale (inshore) fisheries, including in the Hauraki Gulf. In New Zealand fisheries, commercial fish catch may be considered "unwanted" because:

- it is not considered saleable, e.g., fish size is too small or too large, or fish is not of an appropriate species to be accepted by a traditional buyer, or,
- it does not fetch a high enough price to be acceptably profitable (i.e. compared to the potential future catch of possibly more profitable fish).

Further, elements of the fisheries management system in New Zealand create unintended incentives to illegally discard unwanted catch at sea. These include:

- the legal requirement to pay a fee when catch of a quota species exceeds the annual catch entitlement held by a commercial fisher,
- the legal requirement to land virtually all fish caught for sale to a licensed fish receiver (who may have specific targets for sales that do not encompass species actually caught, and therefore refuse to accept other species), and,
- low levels of at-sea monitoring particularly in inshore fisheries, such that unreported catch disposed of at sea is unlikely to be detected by enforcers.

Internationally, there is a growing call for consumers to make more sustainable seafood choices and better utilising fish catch by diversifying the species they eat. This is driven by some celebrity chefs, retailers and advocacy groups. For example, Jamie Oliver promotes recipes for fish species other than the UK’s “top five”<sup>1</sup>, on the premise that consumers may stick to traditional seafood choices because they are not familiar with alternatives. Similarly, New Zealand chef Al Brown promotes consumption of what he calls “less familiar and often misunderstood but beautiful tasting species.”<sup>2</sup> Growing consumer acceptance and demand for a range of fish species contributes to better use of fish catch, reduces wasted catch, and reduces the incentives to discard. Further, where catch is landed and goes to market, it is more likely to be documented in reporting frameworks. This enables informed fisheries management as real catch amounts and species caught are better known.

This question focuses on creating a solution that will efficiently and effectively connect market opportunities with fish catch that would otherwise have been discarded at sea. It is

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<sup>1</sup> <http://www.jamiesfoodrevolution.org/news/we-love-fish-so-much-so-that-were-putting-our-seas-in-danger/>

<sup>2</sup> <https://freshcatch.co.nz/product/als-picks-new/>

intended to enable fishers and buyers to connect across the global supply chain in near-real time, assuring market placement for fish product before vessels return to port. The solution should support a basic version (e.g. operable quickly by fishers at sea, with low transmission burden to promote cost efficiency if satellite internet is required), through to more a complex one with additional features (e.g. operated by a fish receiver or distributor on land, with unencumbered access to internet).

### **Possible solution:**

A possible solution has many components and partial solutions are welcomed.

#### **A solution should:**

- provide a platform to profile products and sellers
- enable a product search by fish species (e.g. by common and scientific name, and/or by image)
- enable the upload of product information including images (fish species, volume for sale, location of capture, photos, etc.)
- enable multiple users with associated structured security/access to login to transactions associated with one product as it moves along the supply chain, and,
- provide for a secure transaction facility to enable completion of online purchases.

#### **A solution could:**

- enable an auction-based sales approach, where multiple bidders compete for product
- support or enable links to traceability systems and software that provide visibility of product along the supply chain (e.g., when a barcode is scanned, an alert is displayed against the relevant product).
- identify and provide users with an option to connect with players at different steps along the supply chain, who can aid product movement from boat to plate (thereby increasing the efficiency of multi-step sales transactions, and enabling new connections to be made with non-traditional buyers and shippers selected online)
- deliver alerts to subscribers when "favourite" products or offerings from a favourite seller become available, and allow characterisation of favourites using different features (e.g. species, size, location of capture, fishing method, vessel, etc)
- provide for pre-loading a seller's profile and generic product credentials (e.g. food safety and sustainability credentials), and,
- integrate with other software used as part of the fishing operation (e.g. link between catch e-logbooks or uploaded product information such that whichever is entered first pre-populates the other).

#### **Outcome:**

The purposes of the solution are to:

- improve fishery sustainability by making the same amount of money from less total catch (because more, and ideally all, catch reaches the market and is sold.)
- reduce wastage of consumable fish catch
- incentivise and improve reporting of fish catch and landings
- enable better informed fisheries management

- provide smaller-scale operators with unprecedented access to global seafood markets and supply chain participants, and,
- improve the overall profitability of smaller-scale fishing operations.

### **Resources:**

#### **Reports:**

Hale, L.Z. and J. Rude. 2017. Learning from New Zealand's 30 years of experience managing fisheries under a Quota Management System. The Nature Conservancy, Arlington.

<https://www.nature.org/media/asia-pacific/new-zealand-fisheries-quota-management.pdf>

Hauraki Gulf Forum. 2014. State of our Gulf 2014. State of the environment report. Hauraki Gulf Forum.

<http://temp.aucklandcouncil.govt.nz/EN/environmentwaste/coastalmarine/Documents/stateofourgulf2014.pdf>

Stakeholder Working Group. 2017. The Hauraki Gulf Marine Spatial Plan – Sea Change Tai Timu Tai Pari. <http://www.seachange.org.nz/Read-the-Plan/>

Telesetsky, A. 2016. Fishing for the future: Addressing fisheries discards and increasing export value for New Zealand's sustainable fisheries. Fulbright New Zealand.

<http://fulbright.org.nz/wp-content/uploads/2016/08/Print-ready-Anastasia-Telesetsky-Axford-report.pdf>

#### **Websites:**

<http://fishbase.org/>

<https://www.seasketch.org/home.html>

<https://www.aucklandcouncil.govt.nz/about-auckland-council/how-auckland-council-works/harbour-forums/Pages/hauraki-gulf-forum.aspx>

### **Background information:**

#### **Foundation North – GIFT**

Foundation North holds in trust for the Auckland and Northland communities an endowment, or putea, of over a billion dollars.

This comes from the sale of the community's shares in what was previously the Auckland Savings Bank. That endowment allows us to make millions of dollars in grants each year to not-for-profit groups in Auckland and Northland.

In 2016 Foundation North launched a new Hauraki Gulf environmental Innovation Fund, G.I.F.T, that is worth \$5 million dollars over five years.

The purpose of the fund is to encourage breakthrough insights, innovations and solutions to the complex environmental issues facing the Hauraki Gulf. [www.giftofthegulf.org.nz](http://www.giftofthegulf.org.nz)