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We would like to thank  
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## Harnessing mobile technology to improve small-scale fisheries management

(a case study from Madagascar)



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### Summary

This technology allows low cost fisheries catch data collection through a mobile participatory system developed for monitoring the landings of broader-scale multi-species fisheries across different ecosystems and habitats.

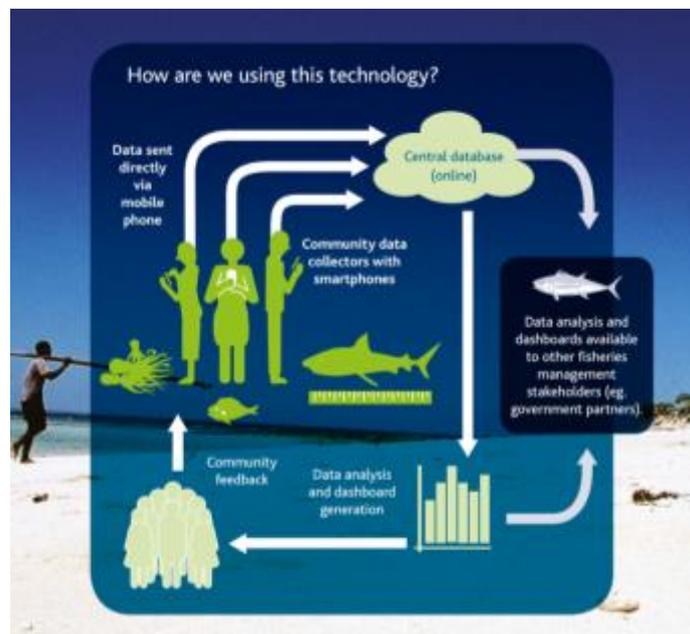
It was first trialled in Madagascar between 2013 and 2016. It is now being replicated in Mozambique, in partnership with ZSL within the [Our Sea, Our Life project](#).

The results presented here are from the original trial in Madagascar.

### Objectives:

To use mobile technology and community data collectors to address the challenge of data-deficiency in small-scale fisheries. By empowering communities to conduct fisheries monitoring, this approach can capture data across vast distances, at low cost, in real time and stimulate an interest in local management.

### Methodology:

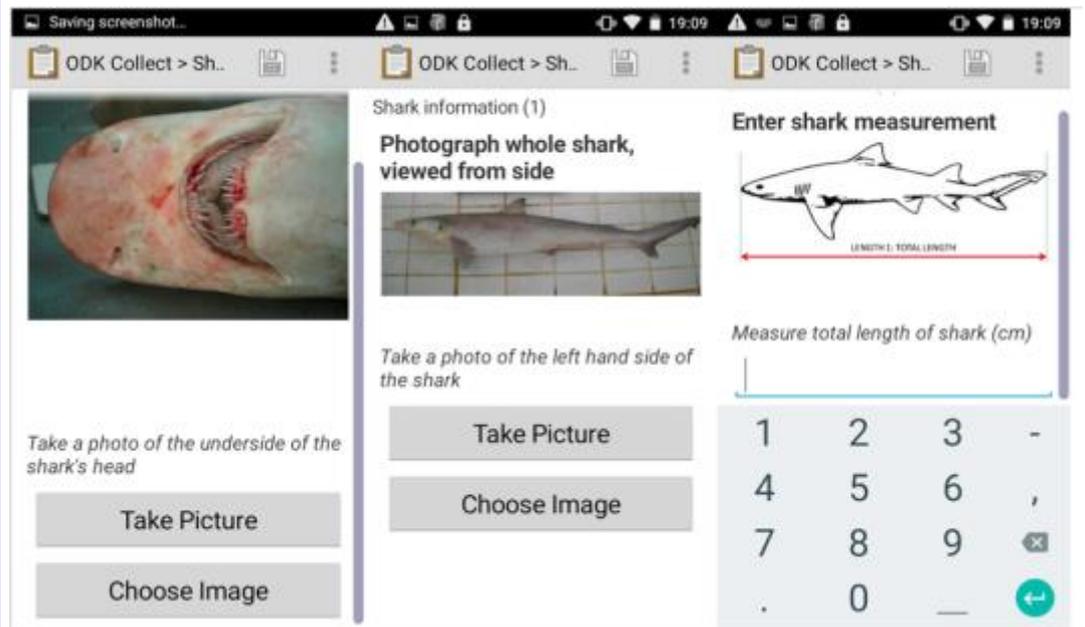


Using open access software, available freely to all, but tailored to the specific fishery and context, we developed and tested data collection forms to sit within the [Open Data Kit app](#) - ODK collect. We worked closely with community members to design forms that are suitable for use by those with low levels of literacy, and with limited previous experience using touchscreens and mobile devices.

The new mobile tools enhance the accuracy, efficiency and resolution of data collection through the use of standardised, customisable forms, incorporating geographic metadata and enabling surveyors to validate records with photographs where required. Catch information is sent from the phones and uploaded to a

[www.fondationensemble.org](http://www.fondationensemble.org)

central cloud-based database in real time, dramatically increasing both the speed and reliability of data collection. The application allows data such as: number of each species captured, size, fishing technique used, location, etc. to be recorded. Photos can also be taken in situ as part of the data collection app.



Get more informations  
on the program  
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Ensemble:



[Securing marine biodiversity through sustainably-financed and locally-managed marine areas in coastal Mozambique – “Our sea, Our Life”.](#)

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Where necessary, solar chargers enable community surveyors to gather data in remote ‘off-grid’ environments, and the devices used can capture and store data in areas without mobile data coverage, before synchronising automatically with the cloud as soon as a user accesses the nearest internet signal. For data collectors monitoring catch in permanently off-grid contexts with no mobile communications, such as offshore island communities, data can be manually retrieved wirelessly by a visiting technician.

Using this mobile app, shark landings data were collected in three regions of Madagascar, between 2013 and 2016. Data were collected via smartphones and also on a paper-based system so that the two methods could be compared to assess accuracy. Community members with no prior monitoring experience were trained to use the app to collect data vital for local marine management and were visited once a month to provide training and retrieve paper data. The main findings and trends were shared with the local management association and the community data collectors on a regular basis. When the project is replicated in Mozambique this will become more automated. We compared data from two time periods of the smartphone trial (at the start June-Sept 2014) and later in the trial once the final version of the form had been used for 11 months (Oct 2015 - Jan 2016) to determine how closely data from the two methods matched.

## Results

A user-friendly adaptable data collection system which was locally relevant and adapted to the context and users was created. None of the data collectors gave up during the project and it is now being trialled with other species.

Data were collected across large geographical areas, time needed to enter data was reduced and it was available for analysis quicker.

Comparisons between the paper data and the phone data show that the number of records entered into the phones increased and the percentage missing from the phone decreased. Data from the trial are available to view in an [online dashboard](#).

## For more details:

Mobile factsheet: <https://blueventures.org/publication/mobile-data-collection-factsheet/>

Mobile monitoring page: <https://discover.blueventures.org/mobile-monitoring/>