

## The latest information on fisheries, aquaculture and climate change in the Pacific

*In late 2011, SPC published a comprehensive assessment of the vulnerability of tropical Pacific fisheries and aquaculture to climate change,<sup>1</sup> and a summary of the main findings for each Pacific Island country and territory.<sup>2</sup> These two publications were written to assist countries and territories in understanding why and how climate change is likely to affect the plans they have to maximise sustainable socioeconomic benefits from fisheries and aquaculture. These publications conclude with the implications of climate change for the contributions that fisheries and aquaculture make to economic development, government revenue, food security and livelihoods, and the adaptations and policies needed to minimise the risks of climate change to these contributions, and to maximise the opportunities expected to arise.*

To assist national managers, policy-makers and other key stakeholders in fisheries and aquaculture to integrate the recommended adaptations and suggested policies into strategic plans for the sector, SPC and the lead authors of the vulnerability assessment have produced a range of other summary documents.

A series of four-page Policy Briefs<sup>3</sup> are now available, which summarise the main expected impacts and list the key adaptations and suggested supporting policies. There are separate Policy Briefs for oceanic fisheries, coastal fisheries, freshwater fisheries and aquaculture.

The main outcomes of the workshop organised by SPC and the United Nations Food and Agriculture Organization (FAO) in Noumea in 2012 — which were to transfer the results of the vulnerability assessment to the Heads

of Fisheries Departments from the region — were published as part of the FAO Fisheries and Aquaculture Proceedings entitled “Priority adaptations to climate change for Pacific fisheries and aquaculture: Reducing

risks and capitalising on opportunities”.<sup>4</sup> The workshop report contains a summary paper,<sup>5</sup> which organises the information from the vulnerability assessment in a new way to link the projected effects of climate change on fish habitats to the future production of fish and invertebrates.

A short article synthesising the main findings has also been published in the journal *Nature Climate Change*.<sup>6</sup> This article is based on the latest modelling for the projected changes to rainfall and major ocean currents across the region. It also includes the latest modelling of projected changes to the biomass of skipjack tuna under a high CO<sub>2</sub> emissions scenario. The article describes the resources and countries that are likely to be adversely affected by climate change, and those that are expected to be favoured. It also summarises key adaptations and supporting policies, and lists important questions that remain to be answered to reduce any uncertainty about the effects of climate change on fisheries and aquaculture in the region.

### For more information:

**Johann Bell**  
Principal Fisheries Scientist, SPC  
([johannb@spc.int](mailto:johannb@spc.int))

<sup>1</sup> Bell J.D., Johnson J.E. and Hobday A.J. (eds). 2011. Vulnerability of tropical Pacific fisheries and aquaculture to climate change. Secretariat of the Pacific Community, Noumea, New Caledonia. 925 p.

<sup>2</sup> Bell J.D., Johnson J.E., Ganachaud A.S., Gehrke P.C., Hobday A.J., Hoegh-Guldberg O., Le Borgne R., Lehodey P., Lough J.M., Pickering T.D., Pratchett M.S. and Waycott M. 2011. Vulnerability of tropical Pacific fisheries and aquaculture to climate change: Summary for countries and territories. Secretariat of the Pacific Community, Noumea, New Caledonia. 372 p.

<sup>3</sup> Downloadable from: <http://www.spc.int/DigitalLibrary/FAME/Collection/Brochures>

<sup>4</sup> Johnson J., Bell J. and DeYoung C. (eds). 2013. Priority adaptations to climate change for Pacific fisheries and aquaculture: Reducing risks and capitalising on opportunities. FAO Fisheries and Aquaculture Proceedings 28, Food and Agriculture Organization of the United Nations, Rome, Italy. 109 p. [available from: [http://www.spc.int/DigitalLibrary/Doc/FAME/Meetings/13\\_SPC\\_FAO\\_climate\\_workshop\\_Proceedings.pdf](http://www.spc.int/DigitalLibrary/Doc/FAME/Meetings/13_SPC_FAO_climate_workshop_Proceedings.pdf)]

<sup>5</sup> Bell J., Johnson J., Ganachaud A., Gehrke P., Hobday A., Hoegh-Guldberg O., Le Borgne R., Lehodey P., Lough J., Pickering T., Pratchett M., Sikivou M. and Waycott M. 2013. Vulnerability of fisheries and aquaculture to climate change in Pacific Island countries and territories. p. 25–109. In: Johnson J., Bell J. and DeYoung C. (eds). Priority adaptations to climate change for Pacific fisheries and aquaculture: Reducing risks and capitalising on opportunities. FAO Fisheries and Aquaculture Proceedings 28.

<sup>6</sup> Bell J.D., Ganachaud A., Gehrke P.C., Griffiths S.P., Hobday A.J., Hoegh-Guldberg O., Johnson J.E., Le Borgne R., Lehodey P., Lough J.M., Matear R.J., Pickering T., Pratchett M., Sen Gupta A., Senina I. and Waycott M. 2013. Mixed responses of tropical Pacific fisheries and aquaculture to climate change. *Nature Climate Change* doi: 10.1038/NCLIMATE1838