CORRESPONDENCE:

A critical role for carbon offsets

To the Editor — In an interview in *Nature Climate Change*[1], Professor Kevin Anderson of the UK Tyndall Centre argued that "offsetting is worse than doing nothing". This assertion should be qualified on some critical fronts.

There is good reason to be sceptical of offsets. The largest source of certified emission reductions issued through the Clean Development Mechanism (CDM) has been the destruction of industrial gases[2,3]; the majority of registered projects are located in four countries (China, India, Brazil and Mexico)[4]; and the sustainable development benefits of many CDM projects have been questioned[5,6]. The increase in global greenhouse-gas emissions in 2010 was the largest on record[7]. Carbon offsets are not yet reducing emissions in any meaningful terms, and the main offset policy mechanism — the CDM — is failing to achieve broad sustainable-development outcomes.

We suggest, however, that offsets need not be all bad. Offsets can help achieve the adaptation and socio-economic transition outcomes we urgently need. So how can we encourage offsets with these beneficial outcomes? To answer this, consider offset projects categorized according to four general approaches: 'Brown', 'Yellow', 'Green' and 'Blue'. Brown methodologies represent improvements in existing industrial processes. Yellow methodologies involve alternative development pathways — meaning renewable energy. Green methodologies directly sequester carbon in terrestrial ecosystems. Blue methodologies involve sequestration in aquatic environments.

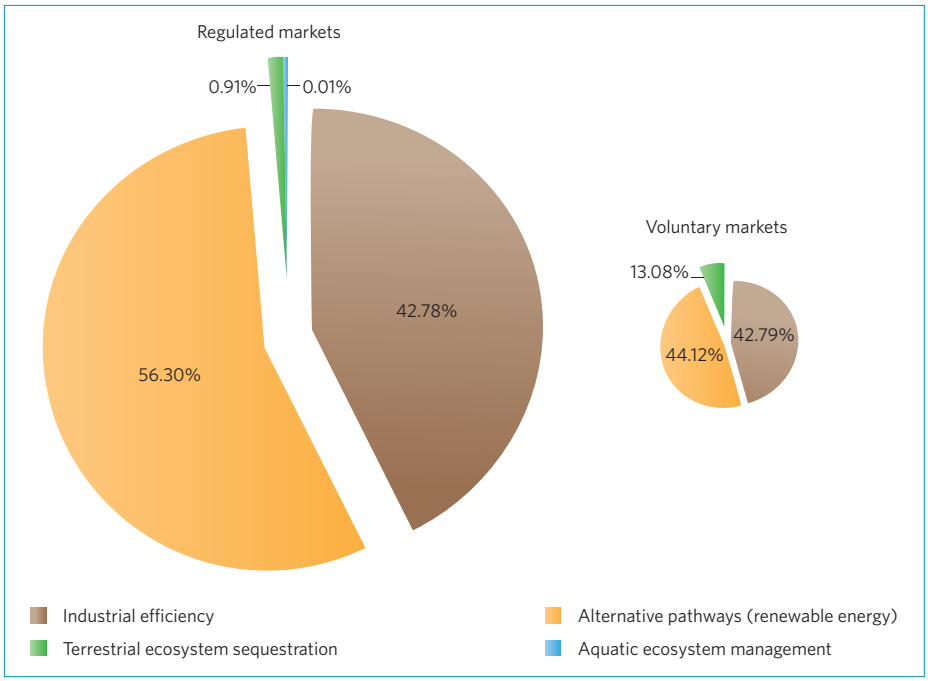

Figure 1 | Proportions of carbon-offset projects by sectoral scope (or project type) in regulated and voluntary markets. CDM and Joint Implementation data were obtained from the UNEP Risoe CDM/Joint Implementation Pipeline Analysis and Database[4]. Data for voluntary schemes — including Brasil Mata Viva, Carbon Fix, the Chicago Climate Exchange, the Climate, Community and Biodiversity Standards (CCBS), Gold Standard, ISO 14064-2, Plan Vivo, Social Carbon, and the Verified Carbon Standard, previously the Voluntary Carbon Standard — were sourced from online registries between December 2010 and March 2011. Data for Brasil Mata Viva, Carbon Fix, ISO 14064-2, Plan Vivo, Social Carbon and the Voluntary Carbon Standard were sourced from the Market Environmental Registry (Public View). Chicago Climate Exchange data were extracted from the Chicago Climate Exchange Registry (2010), and Gold Standard data from the Gold Standard Registry (2010).

Around 98% of all offset projects globally are Brown or Yellow, and less than 2% are Green or Blue, with slightly more Green and Blue projects in voluntary carbon markets (Fig. 1). Yet Green and Blue projects, if done right, provide the greatest sustainability benefits: they support ecosystem services, enhance food security, support adaptation to climate change, and play a crucial role in regulating feedbacks between the land surface and climate systems (a critical yet largely overlooked element of anthropogenic climate change)[8–10].

Green and Blue carbon offset projects should be encouraged. If Green and Blue projects were to assume a greater piece of the carbon-market investment pie, then the sustainability outcomes of carbon offsetting could be greatly improved.

The challenge of how to make Green and Blue offsets viable investment propositions in carbon markets is a vexed and ominous dilemma. Some progress is being made however; the case of Australia's recent Carbon Farming Initiative being one manifest example. It's important that attention continues to be devoted to these matters in research and policy agendas. It may be the case that offsetting has so far been "worse than doing nothing," but we believe that with reform, offsets can serve a critical role in effective climate change mitigation and adaptation. ❐

References

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