



Effective engagement for climate services: Methods in practice in China

Nicola Golding^{a,*}, Chris Hewitt^a, Peiqun Zhang^b

^a Met Office, UK

^b Beijing Climate Centre, CMA, China



A B S T R A C T

Engagement between providers and users is well acknowledged as one of the most fundamental activities in the provision, development and use of climate information for decision-making, or climate services. Yet there is little guidance in the literature on the most effective methods of engagement and demonstration of these methods. Here we present experiences of effective engagement between providers and users to understand the climate information requirements of decision makers in China; and to engage users more fully in the design, development, and delivery of climate services. We find value in the three methods of engagement explored here (passive engagement, interactive group activities, focused relationships), and share insights for when it may be most appropriate to use each method. We also highlight the challenges associated with each method, and the barriers and enablers to successful engagement drawn from these experiences. We further suggest how these conclusions have a much wider relevance and may be used to inform planning of engagement activities in other contexts.

1. Introduction

The appropriate provision and effective use of climate information from scientists or other providers to decision makers is now seen as an important activity in protecting and benefiting the socio-economic welfare of a country or region (e.g. CARE Climate Change, 2014; IPCC, 2014; Jones et al., 2015; Lu, 2009; Street et al., 2015; Toman, 2014). Increasingly, extreme climate events, some of which can be attributed to anthropogenic climate change, and others to natural variability within the climate system, are causing significant damage and disruption, causing loss to life, infrastructure and livelihoods. Climate services seek to allow decision makers to increase resilience to, or maximise gains from, current and future climate conditions through the delivery and use of climate information. However, many have referred to the perceived gulf or ‘valley of death’ between the communities of climate service providers and users, and attribute the improper use or the lack of use of climate information to this divide. The Global Framework for Climate Services recognises user engagement as a fundamental activity in addressing this issue (Hewitt et al., 2012).

Provider-user engagement in the climate services context refers to activities at the interface of those who develop and provide climate services with those who make use of climate services for decision-making. The activities include one-way engagement such as websites, seminars, and brochures; but tend to more commonly refer to interactive two- or multi-way engagement such as workshops, interviews, and the co-design and co-production of information or services. These

activities all aim to increase the trust, salience, credibility, and legitimacy of climate services, all key factors in their uptake and sustainability (Cash et al., 2003; Lemos et al., 2012; Brasseur and Gallardo, 2016). In this work we define ‘effective’ engagement as an activity or process that demonstrably helps to achieve these aims, and facilitates the transfer and co-production of knowledge, information and ideas.

There is a growing body of literature on the findings of user engagement, and descriptions of activities including user engagement. However, there is little so far demonstrating methods of user engagement in detail. Recently Hewitt et al. (2017) provided a new framework for approaching provider-user engagement. This framework describes in detail the use of three main approaches to engagement, each one increasing in the level of active engagement between providers and users, and provides a valuable starting point for any engagement activity.

In this paper we expand on the framework presented and give examples of the design and delivery of different levels of user engagement. These examples are all drawn from the Climate Science for Services Partnership (CSSP), established in 2014 between the UK Met Office and the China Meteorological Administration to develop a strong strategic partnership between UK and Chinese climate scientists; to accelerate and enhance collaborative science programmes; and drive forward climate services, developed in partnership, based on the climate science research & development programme. This partnership allows us the opportunity to explore best-practice in climate services development, including opportunities to experiment with both effective and less effective methods of user engagement.

* Corresponding author.

E-mail address: nicola.golding@metoffice.gov.uk (N. Golding).

2. Methods of user engagement

Following Hewitt et al. (2017) we consider three main types of user engagement, increasing in level of active engagement: passive engagement, such as the use of websites, brochures, or surveys; interactive group activities, such as workshops or interviews; and focused relationships, where deeper engagement is achieved through sustained relationship with a selected individual or group. In this section we outline the approach taken for each method of engagement, how this translated into successful engagement, and what challenges were found at each stage. These findings are then summarised in Section 3, along with discussion of how these may be applied to other contexts.

2.1. Passive engagement – Evaluating a seasonal forecast service through surveys

The aim of this engagement activity was to ascertain the value of a seasonal forecast service to a wide range of users. The seasonal forecast covered the area of the Yangtze River Basin in China and was primarily aimed at helping managers of several major dams act in advance of the flood season to protect people and assets downstream as well as predict power output for electricity distributors (for more detail on this prototype service and its evaluation see Golding et al. (2017), Bett et al. (2017)).

A survey was chosen as the method of engagement to reach as many users as possible, over a broad geographic area. This was also the first formal contact made with some of the users and therefore provided an easy entry point, with potential for further levels of engagement later on. The survey was largely designed to be multiple choice, with opportunities for expanding on answers should respondents wish; short so as to not disengage people at an early stage, however covering all key information so respondents didn't need to be contacted again. In addition, as this survey was designed for a range of users (with different levels of expertise), everyday language was used where possible and all technical terms explained. The survey was translated into Mandarin and responses translated back into English. Questions covered three broad areas:

- Did users receive the forecast, when, and how?
- Did users make use of the forecast in decision-making, and how?
- Did users have additional requirements or want improvements to the forecast?

In general the outputs of this engagement activity were very useful. We had little control over the reach of the survey as we relied on a 'snowball' effect, and the 25 responses to the survey covered a broad range of users from different economic sectors and with different levels of expertise in the use of seasonal forecasts. In addition we had no control over who in each organisation would respond, and therefore how useful and relevant the responses would be. However, most responses gave high levels of detail where it was allowed and all answered all the questions, showing clear oversight of relevant activities. Prior to the survey our understanding of user requirements for this service was limited to only a couple of users, and therefore the use of the survey gave us access to much broader requirements. The survey also provided convincing evidence of the value of this climate service, as most, if not all respondents gave examples of where the use of the forecast in decision making had led to either saving money, property, livelihoods or even lives.

The questions around further requirements or improvements to the forecast were particularly valuable for the continued development of the forecast, as they provided priority areas for both science development and updating the communication of the forecast. The contacts gained through the use of the survey in this way now allow us to follow up with deeper engagement with either a group activity or more focussed relationships.

2.2. Interactive group activities – Energy sector knowledge exchange workshop

The aim of this engagement activity was to initiate dialogue between scientists (including climate service providers) and potential users of climate information. There was limited previous engagement between the groups present, although those present had been targeted as more expert and ready to make use of climate information, and were already somewhat engaged in the topic as they had prior experience using climate information. The workshop was broad in scope, as we hoped to understand the complete requirements of the users present.

The workshop was semi-structured, with time given initially for a range of presentations from each of the user groups and also tailored talks on climate prediction and projection, climate services in China, and the use of climate services by the energy sector in the UK as a means to illustrate an existing successful application. These talks were useful in establishing the interests and level of expertise of all present, and in setting the scope for the conversations that followed. The remainder of the workshop was given to open conversation, facilitated to make sure the views of all present were included.

This method of engagement resulted in the collection of large amounts of information about the sector, and individual requirements for each of the users. It succeeded in highlighting a number of areas where climate services could add value to the operations of the energy sector and these can now be considered for development as prototype climate services. The positive response of users and their expressed desire for further engagement demonstrates that this was a constructive and valuable method of engagement for both providers and users, and certainly will enable progression to more focused relationships if this is desired.

This engagement activity did have challenges associated with it, and some barriers to effective engagement were apparent. Primarily language was a barrier – the workshop was led by both English and Chinese scientists and the user attendees largely spoke only Mandarin. In addition the technical language used by the two groups were often incompatible, leading to some confusion over topics such as weather and climate services. The climate science technical terms of skill, prediction and uncertainty did not translate well, however the portion of time given to explaining these concepts was worthwhile.

In this instance all attendees were of similar expertise and confidence in discussing the use of climate information. Similarly all were at an appropriate level in their organisation to discuss broad concerns openly. The same has not always been the case in similar activities, where very often the hierarchical nature of organisations in China means a group interaction is not the most productive. While the attendees in this case were keen to attend and were easily persuaded of the relevance to their activities, a broader range of requirements might have been gained by multiple meetings in different locations, and by clearer demonstration of the benefits of climate information rather than weather information. Finally, for this level of engagement to have greater value, follow-through with additional information and focused individual engagement is essential.

2.3. Focused relationships – Seasonal forecast consultation conference

This in-depth level of engagement was chosen to develop a more symbiotic relationship with an individual user group, to co-develop and refine an existing service and open more communication channels to ensure the most effective use of the climate information available. This activity was used alongside the surveys in 2.1 to evaluate and improve the seasonal forecast service for the Yangtze River Basin, and the focused relationship was with a key hydroelectric dam operator with responsibilities for flood protection of major cities and agricultural land, energy provision for the same cities, and further for water resources and ecological protection.

The first activity at this higher level of engagement was the

Download English Version:

<https://daneshyari.com/en/article/8867310>

Download Persian Version:

<https://daneshyari.com/article/8867310>

[Daneshyari.com](https://daneshyari.com)