

<p>Institution: University of Worcester</p>
<p>Unit of Assessment: 17 Geography, Environmental Studies and Archaeology</p>
<p>a. Context</p> <p>The submitting unit's principal strategy is to apply scientific and social scientific understanding to achieve local, regional, national and international impact. To enable maximum impact from research conducted in the submitting unit, the underpinning philosophy is that research should be disseminated in ways where the outcomes can be readily interpreted by a wide audience. In the case of specific African communities (Dixon), this has included interaction with individuals unable to read or write. Delivery has been facilitated by taking a selective approach to research, engaging from the outset with that which has clear applied relevance and is thus meaningful to the lives of citizens within the regional community and beyond. Further, the unit's ability to work closely with funders and research users on studies in a robust and rigorous manner has served to enhance their significance.</p> <p>(i) User Groups and Beneficiaries: the unit's research has benefited a wide range of non-academic user-groups. Prominent amongst these have been government advisors and agencies primarily in the UK (Environment Agency) but also internationally (Institute of Water for the Republic of Slovenia), UK policy-makers, and UK local government. The university has supported the latter specifically through its strategy of regional engagement, providing leads and networking opportunities to develop relevant research projects. Individuals or rather groups of individuals have benefitted: for example, farmers in England and Wales (Evans) and in East Africa (Dixon). Private enterprise is also a beneficiary of the unit's research, as evidenced by a current project on orchard fruit production (Westbury) which includes a growers' consortium and major UK supermarket.</p> <p>(ii) Types of impact: There are three main types of impact specifically relevant to the unit's research. First, there is that intent on changing lives. Outcomes are disseminated with a view to maximising reach of the material through both popular and specialist media, including consultations, workshops, web-based documentation, radio broadcasts, television appearances, formal reports, training events, short courses and conference events. For example, archaeological research into the prehistoric environs of the Severn Valley contributes time depth to regional meaning and identity (Lewis). Second, there is policy change. One specific example is the research into agricultural change conducted through the Centre for Rural Research (CRR) (Evans, Storey). This has sought to guide future land use policy, be informative to the agricultural community and to organisations representing it, yet also reconnect the general public with farming issues. Another instance is where research in river science has ensured that the local community issue of flooding is on the agenda of policy-makers and that solutions are being actively sought to ameliorate its effects (Maddock, Milner, Visser). Third, there is changing practices. Emerging research in Environmental Studies on fruit orchards is of high relevance given the regional specialisation in this crop (Westbury). Similarly, work on wetland management is attempting to enhance local food security amongst African families (Dixon).</p> <p>(iii) Relation to range of research: The consolidation and expansion of research effort by all groups included within this submission are guided by the principles just outlined. Essentially, this is to deliver high impact from local research projects grounded in broader regional, national and international contexts. It cross-cuts all research effort. Indeed, commonalities between the research activities from groups within the submission are a distinctive feature of the university's overall approach.</p>
<p>b. Approach to impact</p> <p>The University's Strategic Plan for the period 2007-12, under the broad heading <i>Generating Knowledge and Promoting Enterprise</i>, identified the following key objective: "to support the development and expand the reach of our areas of research excellence...with social and/or community identified impacts". Particular emphasis was placed on the University's regional focus; it was stated that its research would have in the first instance a transformative effect on the West Midlands and Welsh Marches (English counties bordering Wales), although this would not limit the potential for national or international impact.</p> <p>The submitting unit reflects the success of this objective: it has produced high quality research</p>

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which has had wide-ranging impacts on the lives of individuals, on policy and on practice, primarily regionally, but also nationally and internationally.

The unit has sought to facilitate impact in two key ways. First, it has a dissemination strategy that emphasises and values not only the traditional peer-reviewed article but also the research report. For example, CRR's work on monitoring the agricultural landscape of the Malvern Hills Area of Outstanding Natural Beauty (AONB) was professionally designed and published as an open access resource on the AONB Partnership website for use by teams in other AONBs, researchers and interested members of the general public (Evans). Second, it uses active networking locally, nationally and internationally to promote the value of its research and to engage with relevant communities.

The unit's emphasis on local and regional research has been of considerable benefit in developing and maintaining relationships with key users. Direct contact has been possible through stakeholder meetings and interactive research events. For example, a CRR workshop held in January 2008, on the issue of the appearance of field-scale Spanish polytunnels in the agricultural landscape, attracted 30 key participants from across the region. It provided a forum in which dialogue between groups in conflict could be established and promoted research relationships with farming representatives, planners and countryside protection groups. Within Archaeology, relationships with landowners have been sensitively forged. Efficient, professional, yet friendly, relationships have helped to deliver research that meets user needs. For example, the National Trust has been able to draw upon our archaeological expertise to help direct and prioritise its restoration programme of Capability Brown's Croome Park landscape gardening test bed (Lewis); simultaneously offering research opportunities in a truly two-way exchange of research ideas.

Some good examples of how relationships with users are secured and enhanced are match-funded PhD studentships. These have led to clear impacts. For example, Care Farming West Midlands (CFWM) supported a PhD studentship (completed 2013) to explore the *Impact of Care Farming in the UK*. This work has been disseminated locally, regionally and internationally through reports, meetings with the regional coordinator for CFWM, a workshop and conference presentations. It has resulted in an increase in support offered to care farmers, commissioners of health and social care services, charitable organisations and, ultimately, their service users, evidenced both through the knowledge generated being passed directly to providers to act upon and in securing DEFRA funding for an extension of the work of CFWM. Similarly, links with a major supermarket supplier (Waitrose) and a producer group (Fruition PO) were established to fund a PhD study (on-going) examining the value of augmenting bee pollination through the creation of in-orchard wildflower beds (Westbury).

The unit's River Science Research Group (RSRG) has a longstanding relationship with the Environment Agency (EA) having undertaken a range of research for EA since the early 2000s (Maddock). For example, in 2008 Maddock undertook research for EA in collaboration with the Centre for Ecology and Hydrology at Wallingford looking at Rapid Assessment of Physical Habitat Sensitivity to Abstraction (RAPHSA). A more recent articulation of this relationship (2013) is the co-funding of a postdoctoral researcher (Klaar) to examine water abstraction and other flow regulation pressures which lead to failure to achieve Water Framework Directive requirements.

The university offers support for staff to undertake impactful research (through for example the match-funded studentship scheme mentioned above) but also to assess the impact that has arisen from research. For example, Dixon was supported to undertake an evaluation of institutional capacity building scheme involving 'ordinary citizens' in Malawi which he had previously developed.

The university provides dedicated space for outreach and interaction with key stakeholders and the general public, most significantly through The Hive, the award winning joint university and public library, an ideal site for public lectures and workshops, research exhibitions, etc. Institutional support for dissemination is available from the UW's Press Office within its Communications and Participation Department. It has also resourced public dissemination events, seminars, education sessions, and practitioner conferences to assist full engagement with partners and a general audience, and to promote its research (e.g. 2013 Research Focus Conference on sustainability).

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c. Strategy and plans

The submitting unit's strategy for the next five years emphasises the importance of its research having a significant and enduring impact on economy and society, nationally and internationally, but especially regionally and locally. Elements of the submitting unit's approach to impact over the REF period have been particularly effective in ensuring that its research brings benefits to non-academic users and these have fed into this strategy. These are:

i. Close collaboration with research users built on established relationships

The unit will seek to maintain existing relationships but also develop new partnerships. A significant aspect of this will be working with colleagues across the university. For example, the relationship with CFWM evolved through working with colleagues in Psychology with their own well-established relationships and networks. Further opportunities are apparent for cross-disciplinary and inter-disciplinary working which will facilitate impactful research: for example: staff in psychology work on the psychological impact of flooding which coalesces with the focus of RSRG.

ii. Dissemination strategy

The unit's dissemination strategy – of using multiple media to share outcomes - has been successful in ensuring the wide dissemination of research results. There is opportunity, however, to extend this further by utilising social media as a means of dissemination.

iii. Match-funded studentships

To date, staff who have gained matched funding for PhD studentship have done so through their own initiative and drawing on their own contacts. While this is to be praised and further encouraged, increased emphasis will be placed on supporting staff to find this funding by drawing on expertise offered through the university's research office and a soon-to-be-established business development office but also of staff who have been successful in the past acting as mentors.

Other key drivers for the new strategy are:

- **Staffing:** Emphasis is now being placed on the importance of employing staff with a significant track record of undertaking research with the potential for impact but also with the potential to lead others in undertaking impactful research.
- **Public Engagement:** The submitting unit is intent on ensuring that it engages the public with its research in line with the University's commitment to the Concordat for Engaging the Public with Research. A significant strand to this strategy is to make maximum use of the Hive, Britain's first joint university and public library, which provides a unique physical space for such engagement.

d. Relationship to case studies

The case studies selected exemplify the unit's approach to impact in a clear and concrete manner. The first, **Agricultural Change in the Welsh Marches: its impact on agricultural policy and practice**, demonstrates the significance of research which has led directly to changes in policy and practice at the national and regional level, as well as influencing thinking at the international level. The second case study, **Wetland Management and Sustainable Livelihoods in Africa**, exemplifies the drive to establish new pillars of research strength and extend reach into local work with international significance. Here, research into the use of Ethiopian wetlands to improve the security of food supplies has provided new opportunities for the existence of human life itself rather than merely impact upon those lives.