

Sandpit: Agricultural Runoff 22 – 23 October 2019

Location: Penrith

Call for Participants to join a two-day Sandpit focused on Agricultural Runoff and Diffuse Pollution

Fully funded participation (including travel, meals and accommodation)

Closing date for applications: Midnight, 31st August 2019

Introduction

Water runoff from fields is a global economic and environmental challenge. It can lead to soil loss, pollution of surface waters and treatment costs to downstream users. It also leads to higher maintenance costs for watercourses, flood protection measures and in some cases urban areas. The UK is at the forefront of research seeking to tackle such impacts with programmes of technical and policy measures delivered by research, regulatory and third sector organisations (e.g. NFU, and the farming community). Despite these efforts and some examples of progress, the issues and impacts remain unresolved.

STFC recognises that significant potential exists in bringing its expertise, technology and facilities to the challenge of tackling runoff from fields by working with a range of disciplines. This includes those disciplines traditionally associated with the management of runoff alongside new and novel technologies and approaches. The anticipation is that STFC expertise and capabilities can bring about a step-change in resolving the issue.

The Research Challenge

Challenges facing the agricultural runoff community might include:

- Processes influencing agricultural water quality
- Nutrient cycling in the plant-soil-water continuum
- Patterns and pathways of nutrient transport
- Approaches to monitoring and predicting agricultural water quality
- Beneficial management practices for agricultural water quality
- Climate change impacts on agricultural water quality and adaptive mitigation strategies, post CAP, post-referendum and beyond.

Key challenges are given as an example in a potential challenge map in Figure 1. Challenges will map onto STFC capabilities in such a way as to drive the innovative and idea making process at the sandpit. What other challenges do you see and want tackled?

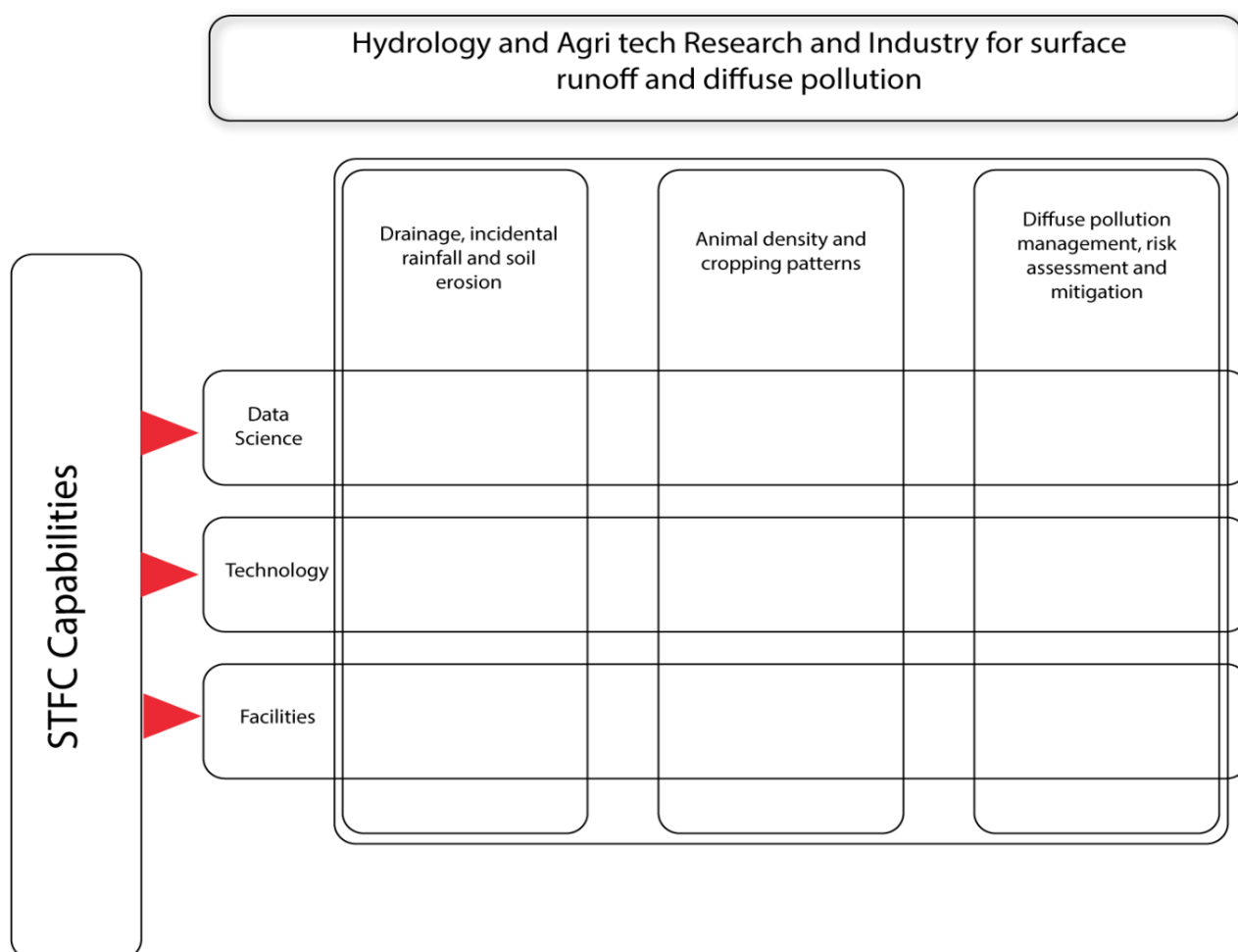


Figure 1: STFC capability and sandpit challenge map

The Sandpit Event

The Centre for Ecology and Hydrology is holding a 2-day sandpit in spring 2019. It is fully funded by the Science and Technology Facilities Council. We will hold the sandpit at the Rheged Centre in Penrith. This brings the advantage of it being close to a centre of expertise for diffuse pollution and rainfall runoff modelling, and also being co-located to a number of important field runoff experiments.

The broad aims of the sandpit are to generate research proposals which can:

- Build a better understanding of the problems and challenges posed by water runoff and allow these to be framed in a clearer way.
- Address the key research challenges that can make use of STFC facilities, technology and expertise.
- Facilitate interactions between key researchers and end-users in water and agriculture.

We need the participation of leading researchers from a broad range of disciplines to achieve the aim of the sandpit. To participate, you will need to be able to demonstrate how you can apply your

knowledge, skills and experience across discipline areas to develop innovative research. Ultimately STFC are looking to develop and work towards delivering practical solutions to the challenges around the water energy food nexus.

The sandpit will include demonstrations of scientific advancements in the area of rainfall runoff modelling. Following the sandpit, participants will be invited to apply for funding for ~10 projects between £20k and £40k each. The aim is for projects to deliver advanced technology solutions to address the challenges identified.

How will the Sandpit Work?

The sandpit is an intensive, interactive and free-thinking environment. A diverse group of participants from a range of disciplines and backgrounds will get together for two days. We will be away from our everyday worlds, to immerse ourselves in collaborative thinking processes to construct innovative approaches.

The process can be broken down into several stages:

- Defining the scope of the challenges
- Evolving common languages and terminologies amongst people from a diverse range of backgrounds and disciplines
- Sharing understandings of the challenges, and the expertise brought by the participants to the sandpit
- Taking part in break-out sessions focused on the challenges, using creative thinking techniques
- Capturing the outputs in the form of innovative research projects
- A funding decision on those projects at the sandpit using “real-time” peer review.

The sandpit will be an intensive event. The venue offers opportunities for relaxation for the well-being of participants. The timetable will include networking and other activities to allow a break from the detailed technical discussions.

Who Should Attend?

We encourage researchers from a diverse range of domains to apply to attend this Sandpit. We are not defining the disciplines which should be represented; rather we are asking potential participants to indicate how their expertise can address their challenge.

This is an opportunity to share ideas and develop future collaborations, to define, understand and address some of the issues and problems around agricultural runoff and diffuse pollution.

Applying to Participate in the Sandpit

We invite applications from individual academic researchers who can contribute to the Challenges in this research area. We will select approximately 25-30 participants to take part in the sandpit. **In order to participate, the person applying must be available to attend for the full two day duration of the sandpit.**

Applicants should complete an expression of interest (Eoi) online by following this link:

Assessing Applications to Attend

A Selection Panel consisting of the sandpit Director and mentors will assess applications. Please ensure you fully complete the Eol survey form, as this is the **only** information on which the panel will select potential sandpit attendees

Post Sandpit Proposal Assessment

CEH will produce a sandpit review report and case study booklet of all the projects presented in the sandpit. STFC will run the funding call through JeS after the sandpit, and administer the awards. The main outcome of the sandpit will be a direct stimulus to research in the arable runoff and diffuse pollution research community. This will lead to idea generation, challenge solutions, and finally 10 fully funded scoping projects. Following the conclusion of the scoping projects, CEH will organise a showcase event held at Lancaster University to present the outcomes to the research and stakeholder communities. It is our understanding that, following the conclusion of the scoping phase, STFC will consider if the projects demonstrate novelty, value for money and impact.

Key Contacts

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Key Dates

Please submit your expression of interest by midnight 31st August 2019

The date for this sandpit is 22nd – 23rd October 2019 at the Rheged Centre, Penrith.

By making an application you indicate that you are available for this date and your commitment to attend if short-listed. Attendance for the full 2 days is mandatory.

The environment at the event will encourage free and open-minded thinking, vital for the purposes of this event and to the future of this area. We will send full details of the venue, how to get there and the accommodation arrangements to participants once they are confirmed.