A new US $30 million initiative was launched in June 2016 to offer a solution to a sheep and goat disease that is transmitted to over 500,000 people per year worldwide. The prize is one of the largest of its kind and is funded by AgResults, a collaborative multi-donor initiative between the Australian, Canadian, UK and US governments and the Bill & Melinda Gates Foundation. The initiative was set up to encourage the private sector to find innovative solutions to development challenges.

**A worldwide competition for a worldwide disease**

The brucellosis vaccine initiative hopes to incentivise those in the animal health, biotech and pharmaceutical sectors to develop a vaccine to protect against the sheep and goat disease caused by *Brucella melitensis*. Brucellosis is a bacterial and zoonotic disease affecting significant numbers of people worldwide who depend on livestock for their livelihood. It is primarily endemic in North and East Africa, the Middle East, South and Central Asia, Central and South America and Europe’s Mediterranean region. Causing abortions, infertility, decreased milk production and weight loss, amongst other effects, in pigs and ruminants, the disease results in a loss of income and nutrition for many smallholder farmers. In people it may cause fever, fatigue and other debilitating clinical signs, which may become chronic if not treated appropriately. The annual impact of brucellosis to smallholder farmers in South Asia and sub-Saharan Africa is estimated at US $641 million per year.

**Prompting the private sector**

The current livestock vaccinations for brucellosis require complex management systems to be effective and may pose a threat of contracting the disease among vaccinators, as the current vaccines contain the live microorganism. Furthermore, due to the thermosensitive nature of the vaccine, it needs constant refrigeration, which for rural or nomadic farmers is not always feasible. Peter Jeffries, CEO of the Global Alliance for Livestock Veterinary Medicines (GALVmed) – an organisation that makes livestock vaccines and medicines accessible and affordable for smallholder farmers in developing countries –
says, “Brucellosis is a significant disease for many people in the developing world and it causes human and animal health problems. An effective brucellosis vaccine would have an incredible global impact.”

In order to develop a new vaccine that can be used in countries where the disease is still endemic, AgResults has contracted GALVmed to host the Brucellosis Vaccine Prize Competition. The prize is designed to provide those in the relevant fields with incentives through significant financial awards that encourage them to deliver a vaccine with significant benefits over the current products available.

GALVmed will act as the project manager working with stakeholders, applicants, the technical committee and the judging panel. The technical committee is an advisory panel of brucellosis and industry experts responsible for finalising the contest rules and desired specifications for the vaccine. The judging panel, also a body of brucellosis and industry experts, will then use these specifications to determine at each stage whether applicants working towards creating a vaccine (known as solvers) are eligible for a milestone payment.

**How to win US $30 million for a best-in-class vaccine**

The competition is structured in such a way that solvers will only receive money if they achieve key objectives, which are structured into three milestone periods. In the first milestone, up to ten solvers may be awarded the first prize of US $100,000 each, following selection by the judging panel based on a submission of a competitive application to AgResults.

The second stage of the competition focuses on product development. To be eligible for this stage’s associated milestone payment of US $1 million, solvers must test a scaled-up version of the vaccine to prove it meets the necessary efficacy standard.

In the last milestone, the first solver to register a vaccine that meets the minimum viable product standards will be awarded a grand prize of US $20 million. These standards require that the vaccine must be safe to administer and more effective in target animals than present vaccines. Organisations have up to ten years to register the new product.

An additional prize of US $5 million will be awarded to the solver, which may be either the final prize winner or a different solver, who develops a vaccine that meets the ‘Best in Class’ criteria of the target product profile. While currently being finalised, this may include the use of innovative technology to ensure superior safety in people and animals, protection against more than one Brucella species in small ruminants, and a reduced reliance on refrigeration.

This approach of setting out a prize for finding a highly innovative solution for an old problem, also known as ‘pull mechanism’, has already been successfully used in other areas, but is completely new to the livestock and animal health sector. It may therefore not only bring new and better vaccines to smallholder farmers and prevent diseases, but it may also trigger similar initiatives and further innovation.