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## Cover image

See the following video:

<https://www.peaceparkstv.com/peace-parks-man-treadle-pumps/>

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## EDITOR'S NOTE

# International Year of Basic Sciences for Sustainable Development

The photo on our cover features a woman (we could unfortunately not find her name) from the Similaha Community Conservancy in Zambia using a treadle pump to irrigate her crops. A treadle pump is a human-powered suction pump that is used for irrigation. It is designed to lift water from a depth of up to seven metres. Treadle pumps were distributed to Conservation Agriculture farmers in Similaha through an initiative by Peace Parks Foundation ([www.peaceparks.org](http://www.peaceparks.org)), which is headquartered in South Africa. Farmers with access to donated treadle pumps and piping near a water source are able to irrigate their crops all year round, helping to provide food security during the dry summer months.

This is such a good example of how understanding and applying physics (a basic science) has helped provide solutions for sustainable development. There are, of course, many others.

This edition ties in with the International Year of Basic Sciences for Sustainable Development (IYBSSD 2022), which aims to raise awareness of the role of the four basic sciences – physics, chemistry, maths and biology – in developing sustainable solutions to the challenges of our time, and our planet.

Basic science quite literally permeates our entire universe. Appreciating this can start with the curiosity of children playing with bugs in the dirt or watching birds in the sky. Basic scientific principles can also – and should – have an impact on how we govern ourselves, how

we write laws and how we care for each other. That is why we included articles spanning a wide range of topics. From the power of birthing to promote basic citizen science, the huge impact of sharing simple science stories, the microscopic critters that live in dung beetle guts, and even how it can snow in the Sahara! And because we believe basic sciences should also be applied to improve basic services, to develop human livelihoods in Africa in a sustainable way, we also look at the science and legislation of water services and public health, the various governmental structures ensuring municipal service delivery, and at some real metrics on whether South Africa is making progress with regards to its sustainable development goals.

The edition, my first as editor, therefore truly has something for everyone and we do hope you will enjoy reading it and be once more inspired about the role of basic science to help create a “better life for all”. That is, after all, our quest.



**Fanie (RS) van Rooyen** (*Quest* Editor) with support from Susan Veldsman, †Tsepo Majake, who sadly passed away on 20 June 2022, Prof. Himla Soodyall (ASSAf), Caradee Wright, and Joanne Riley (SAASTA).

Lesisiqephu sibopheke kwi International Year of Basic Sciences for Sustainable Development (IYBSSD 2022). Injongo yaso ukuqwashisa ngezinhlabo ezine ze sayensi-izibalo, ezobuchwepheshe, ikhemistri kanye nesayensi yezinto eziphilayo.

*Translated by Zamantimande Kunene*

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