

*SOIL SCIENCE
SOCIETY OF
SOUTH AFRICA*



NEWSLETTER

No. 114

November 2022

SSSSA COUNCIL: 2021-23

President	Prof J.J.O. Odhiambo (University of Venda)
Vice-President	Prof J.J. van Tol (UFS, Bloemfontein)
Past President	Mr M. du Plessis (NWK, Lichtenburg)
Secretary/Treasurer	Mrs N. Nortjé (SAPSSC, Bloemfontein)
Members	Mr D. Haarhoff (GWK, Douglas)
	Dr G. Nortjé (UNISA, Pretoria)
	Dr A. Rozanov (Stellenbosch University)
	Dr C.M. Swanepoel (ARC-NRE, Levubu)
	Dr J.J. Anderson (ARC-NRE, Glen) <i>Co-opted</i>

ADDRESS

**P O Box 13429
Noordstad
9302**

TELEPHONE

**President: 072 378 7716
Secretary: 083 389 0543**

E-MAIL

admin@soils.co.za

WEB PAGE

<http://www.soils.org.za>

(Website co-ordinator: Andrei Rozanov; dar@sun.ac.za)

The SSSSA does not necessarily agree with opinions expressed in this newsletter.

MESSAGE FROM THE PRESIDENT

Combined Congress 2023

The 2023 Combined Congress will be held from 23rd to 26th January at the Future Africa Campus, University of Pretoria. The conference date is fast approaching, and preparations are in top gear. The second announcement was sent out on 19 October 2022, and the deadline for submission of abstracts is 5 November 2022. I would like to encourage members to submit abstracts and take advantage of early registration discount. The societies have invited respected experts in their respective fields of specialization as keynote speakers and this should be an opportunity not to be missed.



SSSSA Webinars

A SSSSA webinar on *Soils Sampling Campaign in South Africa* was held on 14 October 2022. The webinar was not as well attended by members as the previous webinar, and I would therefore like to encourage members of the society to support the webinars by registering and attending whenever they are announced.

Journal

All paid-up members of the SSSSA have free access to the SA Journal of Plant & Soil. The Journal is hosted by Taylor & Francis, and all previous issues are available electronically on the Taylor & Francis website www.tandfonline.com. To help improve the impact factor of our journal, please: cite articles in our Journal, download articles from our Journal and publish in our own Journal.

SSSSA Bursary

The Soil Science Society of South Africa will be awarding one bursary in 2023 to deserving final year undergraduate and/or postgraduate South African students who study full-time for a degree in the broad area of Soil Science (Soil chemistry; Soil physics; Soil biology; Soil fertility; Soil genesis, classification & mapping; Soil mineralogy; Soil technology) at a South African University.

Photo competition

The "Beauty of African Soils" Photo Competition 2022 is on and once again, AGT Cover Crops and Forages is our proud sponsor for the 2022 competition. This competition has proven to be very popular amongst members and I would like to encourage as many members as possible to participate in the competition by submitting their beautiful photos of our soils.

SACNASP

The SSSSA encourages its members to register with SACNASP as Natural Scientists in the field of Soil Science. According to the law, it is compulsory for practicing soil scientists to register with SACNASP. Points for Continuous Professional Development (CPD) must be earned, namely 25 points per cycle of five years. By attending the congress, you earn three of the annual five points. By being a paid-up member of the SSSSA, you earn yet another point annually, and by performing your job as a scientist, you may earn another two points each year. The SSSSA representatives with SACNASP, who among other things are responsible for overseeing the application process for registration, are **Dr Gerhard Nortjé**, **Dr Liesl Wiese-Rozanov** and **Prof Pardon Muchaonyerwa**.

SSSSA Webpage

Members are encouraged to regularly visit the webpage for latest information posted.

Membership

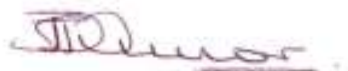
New members continue to join the society and it is especially encouraging to see many young members joining. Registered members should encourage their colleagues who are not registered to do so and senior soil scientists must please encourage juniors to join.

International Union of Soil Sciences (IUSS)

The SSSSA is affiliated to the IUSS. Every paid-up member of the SSSSA is entitled to the privileges of the IUSS. A regular newsletter from IUSS is also circulated online to all registered members of the SSSSA.

This is my last message as President, so I would like to take the opportunity to thank all Society members, and especially the SSSSA Council, for their support over the past two years.

Kind regards.



Jude J.O Odhiambo
(072 378 7716; Jude.Odhiambo@univen.ac.za)

EDITORIAL

Won't it be great to have an "in-person" Congress once again? After several years now of Zoom and Teams (which do still have their place), the Congress, with its numerous opportunities for discussions, interactions, excursions and future research possibilities, is still better face-to-face.



One aspect of this coming Congress that I want to bring to your attention is a work session that is planned on Soil Policy. The Department of Agriculture, Land Reform and Rural Development (DALRRD), have prepared a draft document with the aim of conceptualising how soil data can contribute to various aspects of South African society, including preserving the best soils for agriculture. I would urge all members to make sure that they attend the session, in order to have the opportunity to make contributions to this very important initiative. A copy of the draft document is being sent out along with this newsletter for members to read through before January.

With borders opening up and international travel again becoming the norm (though not a cheap one!), I am delighted to include some contributions from SSSSA members who attended the recent IUSS Congress in Glasgow (or as we locals say, "Glesgy"). Also, Cornie van Huyssteen has sent us a contribution following a field trip to an even colder place than Scotland, namely Iceland. I am sure the members will enjoy it. So, SSSSA members - please, if you travel to interesting and or unusual places (either within South Africa or abroad), send me a short report and a few nice photos. It will make a great addition to future editions.

Past SSSSA President Prof Pieter le Roux sadly passed away not long after the previous newsletter was circulated, so our thanks to Johan van Tol for supplying some very special remembrances. On a personal note, I will always remember Pieter's strong "lecturer voice" around many a SASSO profile pit.

.

Regards,

Garry Paterson

(012 310 2601; 083 556 2458; garry@arc.agric.za)

COUNCIL MATTERS

New Council

There will be a new SSSSA Council elected, as from the January 2023 Combined Congress. Ballot forms will be sent to all members very soon. It is your Society, so please take the opportunity to vote and return the forms to Garry Paterson before the closing date of 15th December.



Nominations for SSSSA Awards

Members are encouraged to nominate prospective candidates in the following categories:

- Silver Medal
- Gold Medal
- Honorary Membership

The criteria are given on the menu on the website (www.soils.org.za) under “Awards”, then “Historical Awards”.

All nominations should reach the President in good time to be adjudicated so that any award can be made at the next Congress (January 2023).

IN MEMORIUM

Obituary: Pieter le Roux

(by Dr Johan van Tol)

To the ones who loved him, Pieter he will be remembered as both devoted and determined. Devoted to what he believed mattered and determined to see it make a positive change in the world. This not only guided his own life, but also the lives of those he impacted as family, friend, coach, supervisor and mentor. A great leader passes the baton, and he did. He kindled a fire, fanned the flame, excited others to continue and then watched it burn. His legacy will have a lasting impact on the environment of South Africa. Another quality of Pieter that marked the lives of those who loved him was his generosity. He not only loved to host but he did so generously. He took pleasure in investing his time, money and energy in his family, friends, colleagues and students.

As a soil scientist, he was a visionary who managed to bridge his research into practical applications. He was the South African “father” of hydropedology, the study focusing on the interactive relationship between soil morphology and water movement through the soil/landscape. He built a research career around the subject, but also tenaciously promoted its importance to ensure that hydropedological studies became part of the Environmental Impact Assessment (EIA) legislation in South Africa. To serve the hydropedological studies, he initiated research into digital soil mapping whereby large areas of land could be mapped at a fraction of the time and cost of traditional surveys, after hearing Malcolm Hensley say, “There has got to be an easier way of doing soil surveys.” Both fields are now part of the research and consultation landscape in South Africa. Additionally, he pushed for reform of the soil classification system, playing a major role in the “open-ended” system now in use in the South African Soil Classification System.



Pieter loved training students, both in the classroom and through spending time with them in the field. He had a unique skill of recognizing and nurturing talent, to bring out the best from his students. He could (and would on occasion) spend hours discussing the water movement within a single soil profile, and he rarely drove past a hillslope seep without stopping for some discussion and taking pictures. He was passionate about instilling “T-shaped” skills into his students, knowing that academic knowledge (the vertical) must be supported by leadership, management and ethical capabilities (the horizontal). His expertise in bringing out the best in students led to three (out of four at the time) of his PhD students being awarded with the Prestige PhD scholarship at the UFS, a university-wide scholarship, which as the name suggests was quite prestigious. He lectured undergrad and postgrad courses at the UFS from 1981, with generations of students receiving lectures from “Attie Karate”, a reference to his many accomplishments as a karateka, in which he rose to an 8th dan.

During Pieter’s career, he published 61 peer reviewed papers, three book chapters, authored and co-authored three books, presented at 114 international and local conferences and supervised or co-supervised 10 MSc and 10 PhD students. He was a recognized researcher with a C2 NRF rating. The bulk of this work was done between 2004 and his retirement as full professor from the University of the Free State in 2015. He served on the board of the Soil Science Society of South Africa for 8 years, being the president between 2013 and 2014. He was a member of the Soil Classification Working Group from 1998 to 2019, serving as the co-ordinator between 2015 and 2016. Probably his greatest contribution to soil classification in South Africa was the initiation of the South African Soil Surveyors Organization (SASSO) in 2002, which organizes quarterly field trips all over South Africa, allowing soil surveyors to become acquainted

with soils from different regions. He also co-founded and served as director of Digital Soils Africa, a soil science consulting company from 2012 until he passed away.

As mentioned before, Pieter was very generous. As students, we had a rule of thumb to determine what was an acceptable food budget when on field trips. We divided what Pieter would have spent by two, and still ate royally. He also provided a way for many students to attend international conferences to gain experience, the cost of which I am only appreciating now with my own students.

He was also generous with his time. Upon returning from a field trip, I mentioned to him that I needed to move a washing machine and in my ignorance (or stupidity), I thought I could do it alone. Despite being tired and wanting to go home, Pieter just calmly mentioned that he would quickly (which turned out to be quite a long time) help me, and never once mentioned that I actually needed more than one person, even though it was blatantly obvious after some time that we rather required three persons for the job.



Pieter (middle) with George van Zijl (left) and Johan van Tol (right), when he was awarded honorary SSSSA membership at the last Combined Congress

Pieter's love of golf was well known. He always tried to fit in a round of golf when travelling for conferences and field work. On occasion, he very kindly brought his second bag of clubs along for me to play with, as I did not have my own. Many will

have found memories of playing at Skukuza Golf course with him. Pieter was a devout Christian, who loved God and lived out that love. During his last days, despite being in pain and having a cloudy mind brought about by the cancer, he always said it was going well, and then mentioned that it was the time when he has been closest to God.

Through his investment in his students through time, effort and money, some of us became both his friends and colleagues. He will be sorely missed. Not just for a quick phone call to get a unique (and often accurate) opinion on some confusing soil data, but also for his stories, golf games, genuine concern for our well-being, and inevitably, some hydro-pedological discussion. In my last conversation with him, he told me that the doctors told him that he did not have much time left and that he would go ahead and wait for us on the other side (heaven). I look forward to the day.

APPOINTMENTS

Mr. Cowan McClean was appointed as lecturer at UFS from August 2022.

DEGREES OBTAINED

North-West University:

Jaco Koch: PhD in Environmental Sciences

"The alteration of mine tailings through chemical, physical, and biological amelioration aimed at improving soil aggregation"

Promotors: George van Zijl, David Weindorff, Piet van Deventer

Willie Cloete: MSc Environmental Sciences

"Determining the effect of soil on bush encroachment between 1993 and 2018 in the North West Province"

Study Leaders: George van Zijl, Klaus Kellner

Anru Kock: MSc Environmental Sciences

"Creation of mid-infrared spectroscopy calibration algorithms for soil property predictions"

Study Leaders: George van Zijl, Dimakatso Ramphisa

Ruan Gagiano: MSc Environmental Sciences

"Effect of soil forms on soil moisture and dryland cotton production"

Study Leaders: George van Zijl, Jasper Dreyer, Angelique Daniell

University of Venda

Ms. Sipiwe Gloria Lusiba graduated with a PhD degree in Soil Science during the July 2022 graduation ceremony. The title of her thesis was: *"Poultry litter and acacia biochar characteristics, and their effects on nutrient availability of three contrasting soils, biological nitrogen fixation by chickpea and dry matter of subsequent maize"*.

CONGRESSES

COMBINED CONGRESS 2023

As mentioned in the President's Message, the next Combined Congress will be held at the Future Africa campus of the University of Pretoria from 23rd to 26th January 2023.



If you have not yet responded to the announcements, please do so as soon as possible, or go to www.combinedcongress.org.za

IUSS, GLASGOW 2022

The 22nd World Congress of Soil Science was held from the 31st of July to the 5th of August. More than 1600 in-person attendees from around the globe attended the Congress.

South Africa was well represented. **Dr Johan van Tol** was elected as Chair of the IUSS Working Group on Hydropedology, while **Prof Cornie van Huyssteen** was elected as Chair of Division 1.4: Soil Classification.



Below are some of the highlights, as recalled by SSSSA members who attended the location.

Prof. Jude Odhiambo:

Generally a very well organized conference with everything done through an APP. Key message from the IUSS Exco meeting to general members of local soil science societies: Members of the local soil science societies are encouraged to read the IUSS newsletter which is published regularly in order to keep abreast with soil science activities around the globe as well as latest information on soil science.

Dr. Elmarie Kotze:

There were some excellent sessions on "Plant soil interactions and their roles in soil formation and sustainable crop production" as well as the latest techniques used around the world in "Sensing soil chemical, physical and biological properties - advances and emerging techniques"

Dr. Isaac Gura:

There were a number of activities that encouraged the guests to interact easily, especially the poster sessions. I found them more interactive and educative. The presentations were also helpful though sometimes one had to choose between sessions. It was also quite interesting to participate during the sessions of the plenary speakers. The venues utilized for the conference were convenient and security guides were always ready to assist which made it easier to find my way during the conference.

Dr. George van Zijl:

To rub shoulders with international leaders in the field and the realization of how important soils are in the current climate/food security debates were some of my highlights. Soils should be protected to protect us. The carbon footprint of the congress was also determined, which is novel, but unfortunately led to below-average catering.

Prof. Johan van Tol:

The session on soil science and policy was the highlight of the congress to me. We as soil scientists have a critical role to play in the formation on policy, especially in relation to climate change mitigation plans. And then of course a boat trip on Loch Lomond ...

MISCELLANEOUS

Dr Cornie van Huyssteen visited Iceland recently for a soils field workshop. Here is his report.

The World Reference Base for soil resources (WRB) recently (6th to 13th June 2022) held a field workshop in Iceland, with the main aim to discuss and evaluate the classification of the Icelandic volcanic soils in the WRB. Most of the Icelandic volcanic soils have an organic carbon content greater than 20% and therefore key out in the WRB as Histosols (being the first reference soil group [RSG] in the WRB key) and not as Andosols (tenth in the key). This is understandably not very helpful for Iceland, since the whole country is thus covered by one soil polygon (RSG) and that is considered not to do justice to these very special soils. Recognition of soil organic carbon is, on the other hand, very important locally and internationally, in the recording and management of soils for carbon sequestration.

Other than being very photogenic (Figure 1), the volcanic soils are characterized by $(Al_{ox} + \frac{1}{2}Fe_{ox}) \geq 2\%$; a bulk density $\leq 0.9 \text{ Mg m}^{-3}$; and phosphate retention $\geq 85\%$.

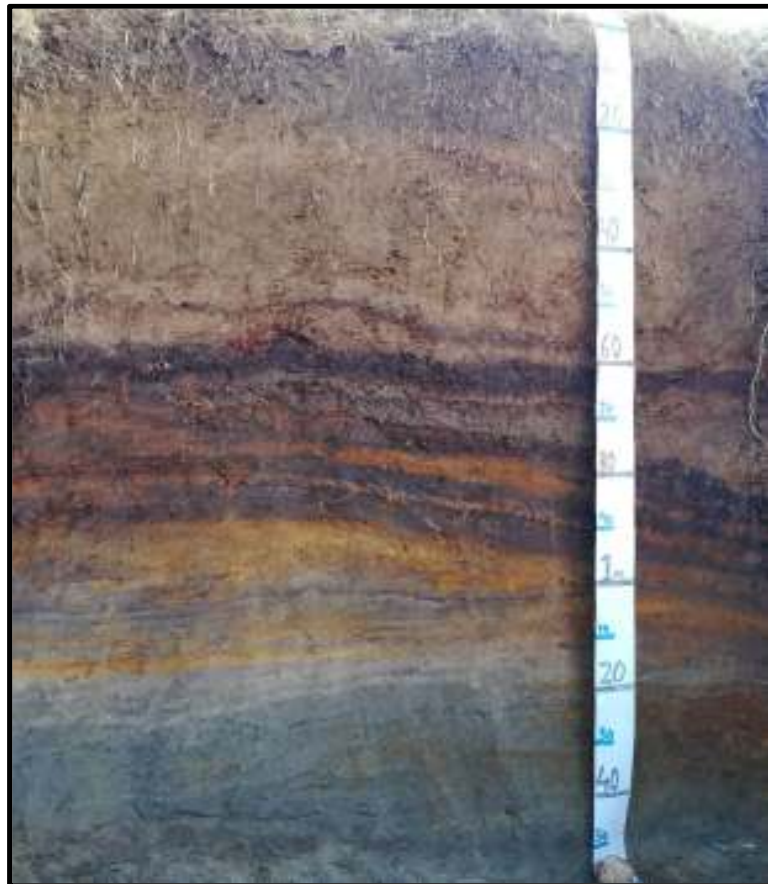


Figure 1. Strongly layered profile

Most of the soils observed during this workshop have a bulk density of about 0.6 Mg m^{-3} (and will thus literally float on water!), while the other diagnostics are also met. Due to the low bulk density, the soils are not cohesive and therefore erode very easily, especially when the protecting vegetative cover was removed (Figure 2).



Figure 2. Soil showing erosion due to loss of vegetation cover

The latter happens through sheep farming in this very harsh and fragile environment. Our host in fact introduced Iceland as a desert - a fact that took me three days to accept! Vegetative production is very low due to the extremely low temperatures. Thus, even though the landscape looks green, closer inspection reveals low biomass, supported by low annual biomass production (Figure 3). This fragile ecosystem that is easily distributed, resulting in severe water erosion. Overgrazing happens simply through overstocking, since farmers are constantly aiming for greater income.

The final conclusion of the workshop was that the Icelandic volcanic soils will continue their position as Histosols, since the latter is considered cardinal for human survival. Recognition of andic properties through the principle qualifiers, will however, move to a position of greater importance, hence higher up in the qualifier list.



Figure 3. Landscape with low biomass production

Of personal interest to me was how closely the living conditions, diet, and personality of Icelandic people is to that of people in Namaqualand. Both areas are characterized by climatically harsh environments (the one cold and dry, the other hot and dry), suited only to the extensive raising of sheep. Both regions' people are thus very hospitable, since they are dependent on each other for survival, and eat predominantly mutton, since it is all that they have access to!

Incidentally, some areas of Iceland are so barren that they were used as backdrop in two Star Wars films, namely “The Force Awakens” and “Rogue One” (Figure 4).



Figure 4. Star Wars landscape

The WRB is one of two systems recognized by the International Union of Soil Sciences (IUSS) for the description and classification of soils in international scientific papers, the other system being the USDA Soil Taxonomy. The WRB is not intended to replace national soil classification systems, but rather to serve for communication at an international level.

I attended the meeting in my capacity as a member of the core working group of the WRB and as chair of Commission 1.4 (Soil Classification) of the IUSS. The next WRB workshop is planned for Barcelona, Spain, in September 2024.



Announcing the
AGT Cover Crops & Forages / SSSSA



2022 Beauty of African Soils Photo Competition

We invite all SSSSA members to submit their most beautiful
digital photos of African soils

Submit your photo entries now (SwanepoelC@arc.agric.za)

Categories include:



SOIL

- Soils up-close
- Soils in landscapes/agriculture
- Soil and people/animals
- Living soils (new category)

Competition details

The competition is now open, and closes on 30 November 2022.

This competition is open to all SSSSA members

If you win, but are behind on membership fees, your outstanding fees will be subtracted from your cash winnings

Photos can be submitted to Corrie Swanepoel at SwanepoelC@arc.agric.za

Photo requirements:

- The entered photo must feature African soil prominently. It may also feature plants, animals or humans, but the focus should be on soil.
- The photo must have been captured by the person entering the competition.
- Each SSSSA member may enter up to 4 photos. (Note: If send via email, only 1 photo at a time, alternatively use WeTransfer).
- Photos must be in digital .jpeg format and must not exceed 10 MB in size.
- High resolution photos are preferred (above 1.5 MP).
- Make sure that if you have any persons featured in the photograph, you have their permission to submit the photo to the competition. Likewise if your photo is the property of your employer or company.
- No copyrighted photos should be submitted.

Categories:

- Soils up-close
- Soils in landscapes/agriculture
- Soil and people/animals
- Living soils (we are looking for pictures about soil health, soil organisms or soil conservation)

Information with your submission:

- The category for which you are submitting the photo
- A title for the photo
- The location where the photo was taken
- Optional – any background information regarding the photo

Judging:

- The SSSSA Council members, in consultation with a professional photographer, will judge the entries and select the winners in each category.
- Winners to be announced at the Combined Congress 2023.
- Winners in each category will receive their certificates at the SSSSA AGM, to be held during the Combined Congress in January 2023.
- Winners will receive cash prizes, sponsored by AGT Cover Crops & Forages.
- Top entries will be featured on the SSSSA website, newsletter and Facebook page, and displayed at the Combined Congress 2023.

World Soil Day 2023

As most members may know, World Soil Day, initiated by the FAO, is held each year on 5th December. This year's theme is "Soils: Where Food Begins".



ARC-Soil, Climate and Water will be holding an information day, where participants will have the opportunity to visit the facilities at both the Arcadia and Silverton campuses, in Pretoria. If interested, contact the PRO, Adri Laas (ALaas@arc.agric.za).

Wherever you are in South Africa, and whether you are able to organise an event for the day or not, all SSSSA members are encouraged on December 5th to promote the importance of soil to friends, family, colleagues and other acquaintances, to spread the message that soils are vital for life.

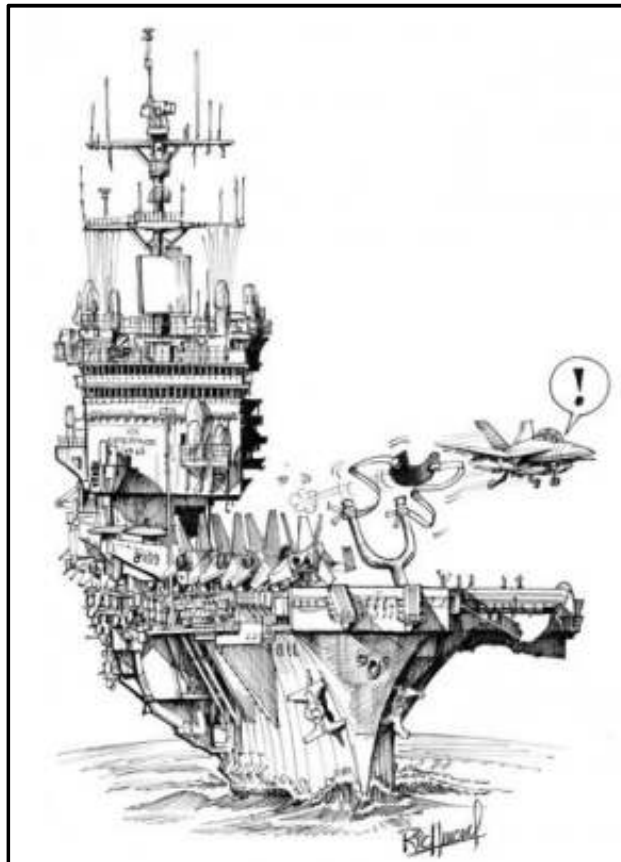
HUMOUR

The Ignorance of Youth

A newly-qualified naval First officer was on night time watch on the bridge when he spotted a light dead ahead. He signaled, "Suggest you change course 15° to starboard". Back came the reply, "Suggest you change course 15° to port".

The First officer was irritated and signaled, "Strongly suggest you change course", to which the reply was "Suggest you change your course, or else."

Now really close to losing his temper, the officer signaled, "Please be aware I am an aircraft carrier - change course!" Back came the reply, "Please be aware I am a lighthouse on a cliff - suit yourself!"



SOIL SCIENCE SOCIETY OF SOUTH AFRICA: MISSION

The SSSSA is a scientific society, which, in the interest of its members, promotes the advancement of soil science and soil technology as well as the responsible practicing thereof by its members with the view to the long-term sustainable utilization of the environment in the interest of the community.

Aims

1. Promotion and protection of the professional status and prestige of soil science as a science and career.
2. Promotion and extension of the society.
3. Promotion of the standard of training of soil scientists and technologists.
4. Creation of opportunities for the free exchange of ideas on soil science and technology.
5. The obtaining and dissemination of knowledge, information and ideas having relevance to soil science by means of discussion and publication.
6. Promotion of contact between the society and other bodies with common or similar interests, both within South Africa and overseas.

GRONDKUNDEVERENIGING VAN SUID-AFRIKA: MISSIE

Die GVSA is 'n wetenskaplike vereniging wat in belang van sy lede verbind is tot die bevordering van grondkundige wetenskap en tegnologie, en die verantwoordelike beoefening daarvan deur sy lede met die oog op die lang termyn volhoubare benutting van die omgewing in belang van die gemeenskap.

Doelstellings

1. Bevordering en beskerming van die professionele status en aansien van grondkunde as 'n wetenskaplike beroep.
2. Bevordering en uitbouing van die vereniging.
3. Bevordering van die standaard van opleiding van grondkundige wetenskaplikes en -tegnoloë.
4. Skepping van geleenthede vir vrye gedagtewisseling oor grondkundige wetenskap en tegnologie.
5. Die verkryging en verspreiding van kennis, inligting en idees wat op grondkunde betrekking het by wyse van samesprekings en publikasies.
6. Bevordering van skakeling tussen die vereniging en ander liggame met gemeenskaplike of soortgelyke belange, beide in Suid-Afrika en in die buiteland.