

# DesertNet International



## DesertNet International Newsletter n. 1/2019

This quarterly electronic newsletter is intended to inform the scientific community about dryland-relevant research matters. The **deadline** for receipt of material for the next issue is **30.06.2019**. Please send your contributions (1000 characters max, including spaces) to [nrd@uniss.it](mailto:nrd@uniss.it).

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### 1. DesertNet updates on DNI elections and General Assembly

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#### Results of the Elections of DesertNet International

The DNI electronic elections were successfully held on 18-19 December 2019. According to the results of the election, the DNI Boards for the next two years are the following:

#### Steering Committee (alphabetical order):

- Elena María **ABRAHAM** (Argentine Institute for Research on Arid Lands, National Scientific and Technological Research Council, Argentina);
- Youssef **BRAHIMI** (NGO “LA ROUTE DU SEL ET DE L’ESPOIR” – LA ROSE, France);
- Michael **CHERLET** (European Commission DG Joint Research Centre, Italy/Belgium);
- Wafa **ESSAHLI** (Consultant, Tunisia);
- María José **MARQUÉS** (Universidad Autónoma de Madrid, Spain);
- Cesar **MORALES** (Consultor, Asesor de Delegado Presidencial para Recursos Hídricos, Chile);
- Kakha **NADIRADZE** ( Association for Farmers Rights Defense, AFRD-EUFRAS Georgia);
- Pier Paolo **ROGGERO** (NRD University of Sassari, Italy);
- Fei **WANG** (Inst. of Soil & Water Conservation, Northwest A&F University, China).

**Advisory Board (alphabetical order):**

- Mariam **AKHTAR-SCHUSTER** (University of Hamburg and Secretariat DesertNet International Germany);
- Jorge **BATTLE-SALES** (Universidad de Valencia, Spain);
- Giuseppe **ENNE** (NRD, University of Sassari, Italy);
- Christopher **MARTIUS** (Center for International Forestry Research, Indonesia);
- Mélanie **REQUIER-DESJARDINS** (Inst. Agronomique Méditerranéen de Montpellier - CIHEAM, France);
- Ute **SCHMIEDEL** (University of Hamburg and Secretariat DesertNet International , Germany);
- Rachid **SERRAJ** (FAO, AGDS, Italy/Morocco);
- Lindsay **STRINGER** (University of Leeds, UK);
- Claudio **ZUCCA** (ICARDA, Jordan);

**Fifth General Assembly of DesertNet International held in Paris (France) on 15<sup>th</sup> January 2019**

At DNI's 5th General Assembly, held on 15th January 2019 in Paris, France, the newly elected DNI Steering Committee and Advisory Board were formally inaugurated. It is with great pleasure that we announce that, based on the decision taken by the new Steering Committee and Advisory Board, the following well-known and experienced members of the new Steering Committee will hold the following positions:

**Chair:** – Youssef **BRAHIMI** (NGO "LA ROUTE DU SEL ET DE L'ESPOIR" – LA ROSE, France);

**Co-Chair:** Michael **CHERLET** (European Commission DG Joint Research Centre, Italy/Belgium);

**Treasurer:** María José **MARQUÉS** (Univ. Autónoma de Madrid, Spain)

**Secretary General:** Pier Paolo **ROGGERO** (NRD Univ. of Sassari, Italy)

Please refer to the enclosed minutes of the General Assembly for more information, also available on the DNI website.

**Message from Melanie Requier-Desjardins, former Chair of DNI**

Dear Members of DesertNet International,

I sincerely want to thank all of you for the chance that you gave me to be your chair these last two years.

I would like to thank Professor Wang Fei who co-chaired the DNI and opened the network towards Asia, which is one of the network's main achievements of these last two years.

I want also to warmly thank the DNI operational Secretariat, Pietro Arras of course, and the all team from the University of Sassari, as well as Ute Schmiedel from the Hamburg University. I also express my warmest thanks to all the members of the DNI Steering Committee and Advisory Board, and in particular to the former chairs Mariam Akhtar-Schuster, Giuseppe Enne, Wafa Essahli, the DNI treasurer Maria José Marquez the Secretary General Pier Paolo Roggero and the colleague Pandi Zdruli. It has been quite a rich experience to chair DNI and I will keep this feeling of being part of a large team, a kind of family, with ties linking all regions.

About what we succeeded to do together, I can stress three points: being still a scientific reference point on land degradation issues, in connection with the UNCCD's work, by developing scientific guidance on land degradation neutrality implementation; establishing ties towards UNFCCC by being accredited; and developing more collaboration with other networks of reference, such as the 4 per 1000 initiative.

Our main meetings over these last two years were at the UNCCD COP in Ordos 2017, Global Soil Week Berlin 2017, DesertifActions 2017, Global Soil Erosion Forum China 2018, and at the UNFCCC COP in Katowice, 2018.

It is sometimes difficult to participate in all events we have been invited to, and I express my gratitude to all the DNI colleagues who represented the network on several international occasions: this "decentralised organisation" also allows more representation of the network's diversity.

DNI is quite an exceptional network, full of potential, and I am proud to introduce the new governance, with Youssef Brahim as your Chair and Michael Cherlet as your vice-chair. I know they will continue to improve DNI's activities and level of scientific reference, and to accompany the Rio conventions' work on land.

*Mélanie Requier-Desjardins, former DNI Chair*

**Message from Youssef Brahimi, newly elected DNI Chair**

Dear DNI members,

I am both humbled and honored to have been elected Chair of DesertNet International. I would like to thank all my colleagues on the Steering Committee for their support, and for the confidence they have placed in me. I am deeply moved by this election because I spent much of my life in scientific research management in Algeria and then in the implementation of the UNCCD, notably as Programme Coordinator of the Global Mechanism of the UNCCD, in charge of South-South Cooperation.

I wish to pay a special tribute to the former Chair, Mélanie Requier-Desjardins, for her commitment and personal involvement in building partnerships and for the greater visibility gained by DNI at the international level. By doing so she followed the way paved by our previous Chairs: Wafa Essahli, Giuseppe Enne and Mariam Akhtar-Schuster. It will be my duty to continue in that direction.

What will be the main challenges for the next biennium? Based on the results achieved so far, our work plan for the next biennium will be built around few key issues:

*Making DNI a scientific reference point at international level:* The multidisciplinary of DNI and the high scientific level of its members allow us to look to become a scientific reference point for international environmental agreements such UNCCD, UNFCCC and CBD. It is worth noting that our strategic objective will be to, first, strengthen our role within the UNCCD processes (COP, SPI, CSO panel ...). This will then put us in a position to build bridges at scientific level with climate change and biodiversity scientific communities. To this end DNI must strengthen its visibility and secure resources.

*Strengthening the visibility of DNI:* This means, at least, to develop a Communication Strategy and optimise our communication tools (Website, newsletter...), but also to manage the scientific knowledge existing in the network. How to share this valuable knowledge: through permanent channels? Focussed international events especially organised by DNI? International courses designed to support young and early career scientists? Strengthening DNI's visibility will also include building partnerships with acknowledged institutions in our fields of activities, as well as involving our network in relevant international initiatives.

*Widening the presence of DNI in the regions:* It seems urgent to widen DNI's presence in all the regions, particularly in sub-Saharan Africa. This will be done through, *inter alia*, campaigns for increasing the number of members from the different regions and by targeting young scientists as well.

These objectives, if you agree on them, can only be achieved collectively, and we are very keen to get all your views and feedback on the proposals which will be shared by our Secretariat. Indeed, it is crucial for the future of our network that all DNI members, beyond the Steering Committee and the Advisory Board members, feel concerned, committed and involved in the implementation of DNI activities, at different levels and according to their specific fields of interest. I would like, on this occasion, to express my appreciation to the University of Hamburg and the Desertification Research Centre (NRD), University of Sassari, for the essential roles they play in keeping all of us informed and connected. We must in priority look to reinforce the financial and technical means of this essential component of the network.

I am looking forward to collaborating with you in the accomplishment of these ambitious objectives.

*Youssef Brahimi, DNI Chair*

**Resilient future rangelands: integrating environment and livelihoods**

The 20th biennial Australian Rangeland Society (ARS2019) conference will be held in Canberra from 2nd to 5th September 2019 at the Kambri Convention Centre. The conference will bring together managers, researchers and policy makers to promote resilient rangeland environments and communities in times of change. A call to submit a short abstract to share your understanding in various ways at the conference is now open until 1st May 2019. Don't miss this great opportunity to join your peers to think practically about the future of 4/5ths of Australia!

More information at <https://www.ars2019.com.au/abstract-submission/>

*Information sent to DNI Bureau*

**DesertNet International and 4 per 1000 Workshop, held in Paris (France) on 16<sup>th</sup> January 2019**

Taking the opportunity of the meeting of the DNI's 5th General Assembly, DesertNet International also organized a Workshop with the "4 per 1000" Initiative, in order to discuss possible collaborative actions, links, and initiatives that might be developed. The meeting between DNI and "4 per 1000" was held on 16th January 2019 in Paris (France), at the CIHEAM Headquarter, in 11 Rue Newton, 75116.

Please refer to the enclosed minutes of the General Assembly for more information, also available on the DNI website.

*Information provided by: DNI Bureau*

**2. Information relevant to DesertNet members**

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**Obituary in memory of Dr. Chedli Fezzani****(English text)**

A great man passed away last 8th February.

Dr. Chedli Fezzani, geographer engineer, doctor of geodesy, took the pilgrim's baton to promote geographical sciences in Africa in the late 1970s of the last century.

He has consistently advocated for the adoption of a strategic vision of geographic information as an essential prerequisite for the planning and implementation of sustainable development at African national, regional and continental levels. He has worked with determination and commitment for the modernization of geodetic networks and their homogenization, for a modern cartography, accurate, adapted and the mastery of knowledge and know-how in these fields. He was the linchpin of a vast training program for geographic engineers both in Tunisia and in Côte d'Ivoire, then, in Africa, when he served as Executive Secretary of the African Organization. In 2004, the National School of Geographical Sciences (ENSG, France) awarded him a medal of merit for this segment of his career.

But it was in the Sahara and Sahel Observatory (OSS) that he left the best of his imprint. This, from the first conference organized in May 1992 in Paris when with his deep voice, with an emphasis which belonged only to him, he read the resolutions of the Conference. It was in plenary session, in the presence of African Ministers at the invitation of the French Minister of Foreign Affairs of the time.

Chedli Fezzani then worked, in 1999, for the internationalization of the OSS, changing his status and transferring its headquarters from Europe to Africa, from Paris to Tunis, more precisely.

He made the OSS a tool for North-South cooperation in the implementation of the Rio-92 Conventions. He was among the first to promote South-South and North-South-South partnerships to boost the implementation, in Africa, of the United Nations Convention to Combat Desertification.

The OSS will enjoy its glory days under its leadership with the launch of long-term ecological observatories, the mobilization around the common management of shared aquifer systems, the definition of action plan monitoring and evaluation systems, etc. as many flagship programs of which he was the promoter. When in 2012, the OSS received the Hassan II World Water Prize on the sidelines of the 6th World Water Forum in Marseille, it was one of the most beautiful crowns of his career.

After retiring in 2004, he was called upon to take up the reins of the Organization again in 2010 to put it back on track and give it a fresh start until the appointment of a new Executive Secretary, in 2012.

Since then, Chedli Fezzani has entrenched himself in his neighborhood of Ezzahra following from afar our professional wanderings; from time to time, though unfortunately more and more rarely, he reminded us of a little detail he did not like, of that grave voice, broken by cigarettes and coffee.

This voice will no longer be heard on the telephone, it will remain forever in our memories and the memory of this great man, "this acting stakeholder, as we said at his time, of the geographic information at the service of sustainable development in the circum-Saharan region" will shine forever in our hearts!

#### **(French text)**

Un grand Homme nous a quittés le 8 Février dernier.

Dr. Chedli Fezzani, ingénieur géographe, docteur en géodésie, a endossé le bâton de pèlerin pour promouvoir les sciences géographiques en Afrique dès la fin des années 70 du siècle dernier.

Il n'a eu de cesse de plaider pour l'adoption d'une vision stratégique de l'information géographique comme prérequis essentiel de la planification et la mise en œuvre du développement durable tant au niveau national des pays qu'au niveau régional et continental africain. Il a œuvré avec détermination et engagement pour la modernisation des réseaux géodésiques et leur homogénéisation, pour une cartographie moderne, précise, adaptée et la maîtrise du savoir et du savoir-faire dans ces domaines. Il a été la cheville ouvrière d'un vaste programme de formation des ingénieurs géographes autant en Tunisie qu'en Côte d'Ivoire puis, à l'échelle de l'Afrique, quand il assura la fonction de Secrétaire exécutif de l'Organisation africaine de cartographie et de télédétection à la fin des années 80. En 2004, l'Ecole nationale des sciences géographiques (ENSG, France) lui attribuera une médaille de mérite pour cette tranche de son parcours professionnel.

Mais c'est sans doute à l'Observatoire du Sahara et du Sahel qu'il imprimera le meilleur de son empreinte, et ce, dès la première conférence organisée en mai 1992 à Paris quand de sa voix grave et profonde, avec une emphase qui n'appartenait qu'à lui, il fit lecture des résolutions de la Conférence en séance plénière, en présence d'une pléiade de ministres africains réunis à l'invitation du Ministre des affaires étrangères français de l'époque.

Chedli Fezzani sera ensuite à l'œuvre, en 1999, pour l'internationalisation de l'OSS, son changement de statut et son transfert de l'Europe vers l'Afrique, de Paris à Tunis, plus précisément.

Il fera de l'OSS un outil agissant de la coopération Nord-Sud au service de la mise en œuvre des Conventions issues du processus de Rio-92. Il sera parmi les premiers à promouvoir le partenariat Sud-Sud et Nord-Sud-Sud pour dynamiser la mise en œuvre de la Convention des Nations-unies de lutte contre la désertification en Afrique.

L'OSS connaîtra ses heures de gloire sous sa direction avec le lancement des observatoires écologiques à long terme, la mobilisation autour de la gestion commune des systèmes aquifères partagés, la définition des systèmes de suivi-évaluation des programmes d'action, etc. autant de programmes phares dont il a été le promoteur et le maître

d'œuvre. Lorsqu'en 2012, l'OSS recevra le Grand Prix Mondial Hassan II pour l'Eau en marge du 6ème Forum mondial de l'eau à Marseille, il le vivra comme l'un des plus beaux couronnements de sa carrière.

Parti à la retraite en 2004, il sera appelé à reprendre à nouveau les rênes de l'Organisation en 2010 pour la remettre sur les rails et lui redonner un nouveau départ jusqu'à la nomination d'un nouveau Secrétaire exécutif en 2012.

Depuis, Chedli Fezzani s'est retranché dans son quartier d'Ezzahra suivant de loin nos pérégrinations professionnelles ; de temps en temps, quoique malheureusement de plus en plus rarement, il nous rappelait à l'ordre sur un petit détail qui ne lui plaisait, de cette voix grave, cassée par la cigarette et le café.

Cette voix nous ne l'entendrons plus au téléphone, elle restera à tout jamais dans nos mémoires et le souvenir de ce grand homme, « cet acteur agissant, comme nous disions en son temps, de l'information géographique au service du développement durable de la région circum-saharienne » brillera à tout jamais dans nos cœurs!

*Wafa Essahli, member of the DNI Steering Committee*

### **"4 per 1000 Initiative" Day**

The "4 per 1000 initiative" Day was held at Silesia University (Katowice, Poland), in parallel to the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24), the 13<sup>th</sup> December 2018.

This collaborative platform promotes new productive models particularly in agriculture to increase soil carbon stocks. Healthy soils and a strategy for mitigation and adaptation to climate change will be both achieved.

DesertNet International participated in the High Level Segment of the Opening Forum to support the initiative. Other participants expressed similar support, e.g. Mr Ryszard Koziol, ProRector University of Silésia; Dr. Ibrahim Mayaki - President of the 4per 1000 Initiative; Mr Didier Guillaume, Minister of Agriculture and Food of France; Mr Samir Taïeb, Minister of Agriculture and Hydraulic and Fisheries Resources in Tunisia; Mr Martien VAN Nieuwkoop, Director Agriculture Global Practice of World Bank; Mr Luis Maria URRIZA, Under-Secretary for Agriculture of the Secrétariat of State for the Agro-Industry of Argentina, among others.

Final highlights focused on the need to change productivity models in agriculture. The active role of land users is of critical importance; in recent decades, land users have seen themselves as the victims of globalisation and environmental protection regulation. Policy for carbon sequestration in agricultural soils has to avoid such negative impacts, especially in this sector which usually has low profitability. Added values of land conservation through carbon sequestration have to be shown. Two fundamentals were mentioned: Public policy as the instrument to change productivity model, including sustainable land management practices, and private and public investments thanks to added values of sustainability.

This approach is in line with Land Degradation Neutrality (LDN), and the three LDN indicators: land cover, land productivity and carbon stocks.

The Consortium approved the following long-term perspectives:

- 1) Continuation of the work of the Scientific and Technical Committee
- 2) Continued work on the collaborative platform and its operation
- 3) Specific work to be done with public and private funders



- 4) Establishment of a regional level within the Initiative
- 5) Contribution to international debates on carbon sequestration in soils
- 6) Communication through the development of an active regional correspondents' group, website and newsletter, and press relations. New platforms such as LinkedIn, Facebook, Twitter can be used.

More information at:

<https://4per1000day2018.sciencesconf.org/>

[https://4per1000day2018.sciencesconf.org/data/pages/Consortium\\_4\\_6\\_RoadMap\\_2019.pdf](https://4per1000day2018.sciencesconf.org/data/pages/Consortium_4_6_RoadMap_2019.pdf)

*Information provided by: María José Marqués, Universidad Autónoma de Madrid, Spain*

### **The Global Soil Erosion Research Forum 2018 (GSERF 2018) success**

The Global Soil Erosion Research Forum 2018 (GSERF 2018) initiated by the World Association of Soil and Water Conservation (WASWAC), Desert Net International (DNI), and Chinese Society of Soil and Water Conservation, was held successfully in Yangling, Shaanxi, China, from September 12th to 16th, 2018. The main themes focused on new challenges and potential opportunities in soil erosion research, theories and applications of soil conservation and ecological restoration and soil erosion risks and countermeasures in the Pan-Third-Pole region. There were 274 delegates from 11 countries, including China, USA, Austria, Switzerland, Spain, Italy, Czech Republic, Japan, Serbia and Ethiopia, participating in this event. The experts shared 32 presentations relating to soil erosion processes, modelling and mapping, soil and water conservation practices and approaches and ecological restoration. Many associations, such as the European Society for Soil Conservation, USDA-ARS National Soil Erosion Research Lab., and the International Soil Conservation Organization (ISCO), presented this forum and shared their research progress.

*Information provided by: Fei Wang, Inst. of Soil & Water Conservation, Northwest A&F University, China*

### **9th Meeting of the UNCCD Science-Policy Interface in February 2019**

The UNCCD Science-Policy Interface (SPI) held its 9th meeting from 25 – 27 February 2019 at the UNCCD Secretariat in Bonn, Germany.

During the three-day meeting, members of the SPI focused on the further development of their technical reports on providing refined guidance for the implementation of land degradation neutrality, and providing guidance to support the adoption and implementation of land-based interventions for drought management and mitigations as laid out in its work programme for the biennium 2018-2019 (for details see UNCCD Decision 21/COP.13 in ICCD/COP(13)/21/Add.1: [https://www.unccd.int/sites/default/files/sessions/documents/2017-11/cop21add1\\_eng.pdf](https://www.unccd.int/sites/default/files/sessions/documents/2017-11/cop21add1_eng.pdf)). The key message emerging from the SPI's work will contribute to the development of the documentation of the Committee of Science and Technology for the up-coming Conference of the Parties of the UNCCD (UNCCD COP 14).

*Information provided by: DNI Bureau*

### **Professor Fei Wang participated in the Sino-Argentina workshop**

The Sino-Argentina Joint Workshop "Desertification, Desert ecology and Restoration" was held in Mendoza, Argentina in Sept 27-28th, 2018. Professor Fei Wang was invited by Dr. Alejandro Ceccatto, Director of National Council of Scientific and Technical Research (CONICET) to participate in this workshop funded by National Natural Science Foundation of China (NSFC). There were 27 presentations focusing on themes of soil and water degradation and conservation, desert ecology and restoration of the degraded ecosystem. Professor Fei Wang gave an "Overview of research on desertification in China" in the opening session and presented on the "Impacts of re-vegetation on soil moisture over the Chinese loess plateau and new challenges of soil and water conservation" in the session on soil and water degradation and conservation. During this visit, Professor Fei Wang was invited to participate in the "First



Argentine Conference on Integrated Desertification Assessment: Approaches and socio-environmental methodologies" held at the National University of Cuyo in Mendoza.

*Information provided by: Fei Wang, Inst. of Soil & Water Conservation, Northwest A&F University, China*

### India to host UNCCD COP14 in October 2019

The upcoming global Conference on desertification, land degradation and drought will be hosted by India from 7 to 18 October 2019 at the Vigyan Bhavan conference centre in New Delhi.

For more information contact: <https://www.unccd.int/news-events/india-will-host-unccd-cop14>

*Information provided by: DNI Bureau*

### UNCCD's Gender Action Plan

In March 2019, the UNCCD secretariat is beginning a campaign to promote gender equality. This initiative is taking place on the occasion of the UNCCD's 25th anniversary.

For more information contact: <https://www.unccd.int/publications/gender-action-plan>

To download the Gender Action Plan go to: [https://www.unccd.int/sites/default/files/documents/2018-01/GAP%20ENG%20%20low%20res\\_0.pdf](https://www.unccd.int/sites/default/files/documents/2018-01/GAP%20ENG%20%20low%20res_0.pdf)

Members of the DNI advisory board have been analysing gender in the context of land degradation neutrality in 2018. After peer-review and publication, the associated paper will be circulated to members of DNI.

*Information provided by: DNI Bureau*

### Survey on Top 100 water research questions

To commemorate water@leeds 10 years anniversary the University of Leeds is undertaking an investigation of what are the Top 100 water research questions, at the moment and for the future, through a survey that we are sending to all research partners.

Even if you don't work on water, some of your most pressing research questions might still be of great relevance in relation to water, so please use this as way of pushing the agenda on your topic of research! We hope to use the results of the survey to help shape funding.

You can find the survey here in English: [https://leeds.onlinesurveys.ac.uk/100\\_water\\_questions](https://leeds.onlinesurveys.ac.uk/100_water_questions)

We are translating it to several languages, the Spanish one now being ready: <https://water.leeds.ac.uk/preguntas-globales-sobre-agua/>

*Information provided by: Lindsay Stringer, University of Leeds.*

## 3. Important upcoming events

List of links to next meetings regarding desertification, water conservation and land degradation.

2019		
24-26 Mar	3rd Agriculture and Climate Change Conference	Budapest,



	<a href="https://www.elsevier.com/events/conferences/agriculture-and-climate-change-conference/about">https://www.elsevier.com/events/conferences/agriculture-and-climate-change-conference/about</a>	Hungary
19-22 Mar	1st WASAG International Forum on Water Scarcity in Agriculture <a href="http://www.fao.org/land-water/events/ws-forum/en/">http://www.fao.org/land-water/events/ws-forum/en/</a>	Prala, Cabo Verde
31 Mar-4 Apr	Land and water days 2019 <a href="http://www.fao.org/about/meetings/land-and-water-days/en/">http://www.fao.org/about/meetings/land-and-water-days/en/</a>	Cairo, Egypt
25-29 Mar	Land and Poverty Conference 2019: Catalyzing Innovation <a href="https://www.worldbank.org/en/events/2018/08/13/land-and-poverty-conference-2019-catalyzing-innovation">https://www.worldbank.org/en/events/2018/08/13/land-and-poverty-conference-2019-catalyzing-innovation</a>	Washington, DC, USA
7-12 Apr	European Geosciences Union <a href="https://www.egu2019.eu/">https://www.egu2019.eu/</a>	Vienna, Austria
29 Apr- 4 May	Seventh Session of the IPBES Plenary (IPBES-7) <a href="https://www.ipbes.net/event/ipbes-7-plenary">https://www.ipbes.net/event/ipbes-7-plenary</a>	Paris, Ile-De-France
15-17 May	Global Symposium on Soil Erosion GSER19, FAO <a href="http://www.fao.org/about/meetings/soil-erosion-symposium/en/">http://www.fao.org/about/meetings/soil-erosion-symposium/en/</a>	Rome, Italy
20-25 May	4th World Congress on Agroforestry <a href="https://agroforestry2019.cirad.fr/programme">https://agroforestry2019.cirad.fr/programme</a>	Montpellier, France
5-7 Jun	7 <sup>th</sup> . Session of the Global Soil Partnership Plenary Assembly <a href="http://www.fao.org/global-soil-partnership/en/">http://www.fao.org/global-soil-partnership/en/</a>	Rome, Italy
17-19 Jun	International Soil Congress 2019 <a href="https://soil2019.gidatarim.edu.tr/tr">https://soil2019.gidatarim.edu.tr/tr</a>	Ankara, Turkey
7-18 Oct	UNCCD COP 14 <a href="https://www.unccd.int/convention/conference-parties-cop">https://www.unccd.int/convention/conference-parties-cop</a>	New Delhi, India
	<b>2020</b>	
11-19 Jun	IUCN World Conservation Congress <a href="https://www.iucn.org/news/secretariat/201805/france-host-iucn-world-conservation-congress-2020">https://www.iucn.org/news/secretariat/201805/france-host-iucn-world-conservation-congress-2020</a>	Marseille, France
24-28 Aug	EUROSOIL 2020 <a href="https://eurosoil2020.com/">https://eurosoil2020.com/</a>	Geneva, Switzerland

*Information provided by: DNI Bureau*

#### **Several sessions at the European Geosciences Union 2019 may be of interest for DNI members**

ITS3.8/BG3.23/AS4.32/OS1.33. The 2018 European drought - scientific observations and societal implications  
 ITS4.2/CL4.21/HS11.21/OS2.11. Past and ongoing climate changes in the Mediterranean region and their impacts on the environment and the human societies  
 SSS2.12. Management and restoration tools for arid and semi-arid ecosystems: recent knowledge and future challenges for plant and soil conservation  
 SSS9.1 | PICO. Making sense of Nature-based solutions: environmental, economic and social aspects  
 GM5.4. Drylands: paleoenvironmental and geomorphic perspectives and challenges  
 SC1.50. Land and soil carbon dynamics at the science-policy interface  
 HS8.3.9. Soil hydrology and irrigation in arid environments

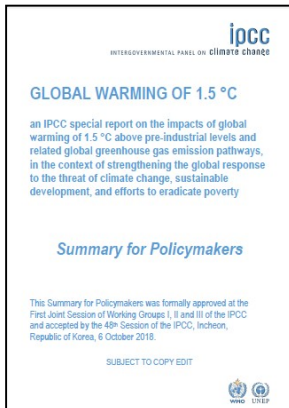
*Information provided by: DNI Bureau*

#### **4. Publications and Special Issues**

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1. Boali, A., H. Bashari & R. Jafari (2019) Evaluating the potential of Bayesian networks for desertification assessment in arid areas of Iran. *Land Degradation & Development*, 30,371-390.
2. Chasek, P., M. Akhtar-Schuster, B. J. Orr, A. Luise, H. R. Ratsimba & U. Safriel (2019) Land degradation neutrality: The science-policy interface from the UNCCD to national implementation. *Environmental Science & Policy*, 92, 182-190.
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## The IPCC special report on the impacts of global warming of 1.5°C now available



At its 48<sup>th</sup> Session, in October 2018, in the Republic of Korea, the Intergovernmental Panel on Climate Change (IPCC) formally approved the Summary for Policymakers of its special report on the impacts of global warming of 2.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.

The special report provides evidence that an additional 0.5°C of warming compared to present will include changes to precipitation levels and patterns, and increased intensity or frequency of droughts. The special report and its summary for policymakers are available at: <http://ipcc.ch/report/sr15/>

DNI Bureau

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## Coexisting with Desert in Abarkuh Yazd, Iran

Soil is a fundamental part of life, and human nature is made up of soil. Looking at material culture of the past societies, it can be concluded that human identity and civilization originated from soil. Therefore, congruity with nature is one of the greatest needs of mankind and a source of his tranquility. Ancient Persians believed that the soil is one of the main natural components for coexistence with the desert. Thus, it can be said that there was a strong and inseparable relationship between lifestyle and soil. This issue has been chosen as the need for a better lifestyle is felt by human society.

Abarkuh is a town in central Iran, in Yazd Province. This ancient town and tourist attraction is located between three historical cities in Iran, i.e. Isfahan, Yazd, and Shiraz, and rests in a desert region with an arid climate. Because of its unique historical and natural attractions, Abarkuh is one of the top 14 visited cities in Iran.

Despite limited resources and difficult climatic conditions in deserts, the traditional Iranian architecture has prevailed over existing challenges. In other words, in harmony with the nature, the traditional Iranian architecture developed a unique culture to make coexistence with deserts possible. When the temperature would rise to 40°C in summer, this Persian climatic architecture provided unimpeded access to cool water and air, and brought comfort to the people in different seasons. Wind-catchers, Persian cisterns, qanāts, icehouses, and the native rural and urban fabric in Iran, especially in arid regions, are all examples of Iranian architectural culture in deserts (Kazemi & Shirvani, 2011). These technologies are capable of bringing the soil, wind, water, shadow, and sun under control, helping to preserve the environment. The issue of human-soil-life, which is the basis of creating a constructive way of connecting man with the world, is beautifully expressed by the Rumi, famous Iranian poet (Fig 1).

Abarkuh is a living testimony to intelligent use of limited available resources in the desert for survival. The town enjoys the peaceful coexistence with desert. This report briefly introduces some of the methods for coexistence with desert in Abarkuh.



*Why do we belong to this soil?  
While our nature was from heaven  
Your body has been created from the soil  
The light of your soul has also taken you from the sky  
That they created our bodies from the soil  
While our souls are heavenly  
We have been from the very beginning also from the land  
But we were unaware that we were from here  
and were buried like a treasure in the land*

Fig. 1. Rumi's poetry

### 1. Qanāt

For centuries, human communities have overcome water shortage challenges in dry regions through different traditional methods. One of these technologies is called qanāt. This technique has provided efficient and constant access to water resources in Iran since the early first millennium B.C. A qanāt is a network of tunnels channeling water from aquifers in higher altitudes to lower areas and ultimately the ground surface with the help of gravity (Jomehpour 2009).

These tunnels may stretch for several kilometers before reaching the surface. For instance, the longest qanāt in the world is located in Yazd Province in Iran, dating back to approximately 2,000 years ago, which is built 23 meters underground and stretches for 80 kilometers (Fig 2-a).

In ancient Iran, pottery pipes, which called Tanbushe, were usually used to transfer water from outlet of qanāt to different places. This ingenious technology is designed to provide a reliable supply of water to meet human needs and irrigation in desert areas. Qanāt systems still have a role to play as a sustainable groundwater management tool in Iran (Jomehpour 2009).

### 2. Icehouse

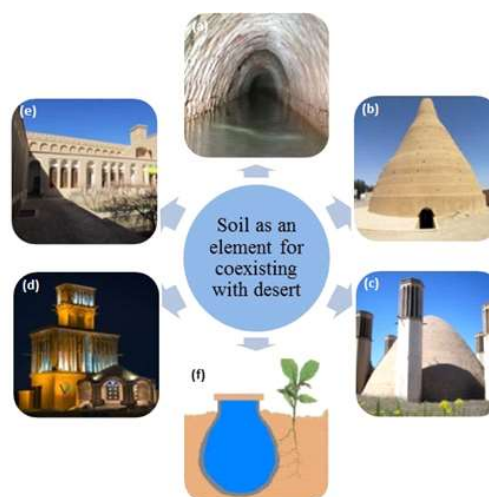
Nearly 400 years B.C., Iranian engineers learned how to store ice in deserts. A Persian ice house, or yakhchal, is an ancient passive refrigerator allowing the storage of ice in the deserts of Iran. Historical Iranian icehouses are special buildings that are regarded as wonders of the ancient architecture (Fig 2-b). The system works on the base of transfer of temperature in the form of radiation from the water surface to the cold sky during winter nights (Aghdabiglo 2001). The ice that was made in the icehouse's pool was broken into pieces and stored in the cellar to be used in hot seasons (Bourgeois & Jelos, 1983). There were three types of icehouses in ancient Iran (see Arghiani et al (2010) for more information).

### 3. Āb Anbār

From ancient times, Iranians used Āb Anbārs or Persian cisterns to store a supply of cold, drinking water for hot seasons. As an underground building, cisterns provided refuge from hot weather and were used to keep water and food products cold (Fig 2-c). In deserts and arid regions, cisterns were filled in with seasonal rivers and rain water. These cisterns were usually kept cold with the help of wind catchers. The shape of the building, insulation of the walls, low position of the reservoir, and existence of wind catchers helped keep the water cold even on warm days and provided the necessary ventilation (Pasand & Taghehbaf, 2014). The technology for building Persian cisterns requires expertise, because the architecture needs to take a series of basic factors into account, including: water pressure exerted onto the reservoir's surface and walls, interior insulation of the reservoir, ventilation, filtration, preventing water pollution, and many other factors (Kazemi & Shirvani, 2011). Abarkuh is home to one of the most beautiful and well-known cisterns in Iran.

### 4. Wind-catcher

Wind-catchers are architectural elements in the shape of towers that were used for cooling water and ventilation, and were built on top of cisterns and houses (Fig 2-d). These wind tunnels catch the free air above the buildings and lead it downwards. The direction of the wind-catchers was aligned with the direction of the dominant summer wind. Thereby, the wind-catcher sucks the air toward the inside of the buildings, while the hot inside air is sucked out through the



**Fig. 2.** Different techniques for coexistence with desert. (a) qanāt (b) Icehouse in Abarkuh (c) Āb Anbārs with five windcatchers (d) Aghazadeh Mansion in Abarkuh (e) wind-catcher (f) pitcher irrigation.

opposite side. This process cools the air inside the building (Memarian,1993). There were usually one to six wind-catchers built on top of buildings and cisterns.

The wind-catcher is one of the manifestations and symbols of the Persian civilization. The wind-catcher in Aghazadeh Mansion in Abarkuh, for example, is 18 meters high. The wind-catcher in this mansion is regarded as one of the finest examples of wind-catchers in the world. Unlike most wind-catchers, this one is a two-storey structure (Fig 2-d).

### 5. Traditional Desert Buildings

For thousands of years, earthen materials have been used in Iran under various geographical and environmental conditions as the main building material in historical buildings and houses. Deliberations on desert architecture lead to the conclusion that adobe is an integral part of this style. Adobe buildings are warm in the winter and cool in the summer. Thick earthen walls can naturally balance the warm and cool air inside the house and condition the air. The traditional method, therefore, can save on energy consumption to a great extent (Ghobadian 2001).

A unique conformity and harmony can usually be seen among these buildings, mainly due to two reasons: First, the same building materials have been used in these houses; and second, their special patterns and spaces have their roots in the laws of the art of traditional architecture (Khoukhi & Fezzioui, 2012). Wind-catchers, courtyards, and thick earthen walls in these buildings create a pleasant microclimate.

The historical buildings of Abarkuh town are regarded as one of the richest and most integrated architectural fabrics in Iran. Craftsmen in Abarkuh produce different kinds of mud bricks with different dimensions according to their location: foundation and wall or mud-bricks for roofing. Aghazadeh Mansion is a beautiful example of adobe buildings in Iran (Fig 2-e).

### 6. Pitcher Irrigation

Buried clay pot or pitcher irrigation is a traditional, water-saving, and cheap subsurface irrigation method used in arid and semiarid regions. In this method, unglazed clay pots are buried and filled with water (Fig 2-f). The water gradually seeps out of the clay pot and into the dry soil. After a few days when the soil in the immediate surrounding becomes wet, less water will ooze out, until the soil gets dry once again. This self-regulating irrigation functions similar to advanced irrigation methods that take advantage of controller systems (Siyal et al., 2009). Considering that no surface evaporation of water occurs, this method requires the least amount of water and yields the most productivity.

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