



one hour documentary

# Seed Hunter



PRESS KIT

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## Seed Hunter

Seed Hunter is a highly entertaining one-hour documentary about a topic that is vital for the future of planet – finding seeds that may help save the world from its greatest ever crisis - a global food shortage brought about by human-induced climate change.

## Short Synopsis

Our planet is heating up and one of the first casualties will be the crops that supply our food. Scientists are working overtime to find solutions including going back to the ancestral origins of our staple foods.

SEED HUNTER will take you on a remarkable journey from the drought ravaged farms of Australia, to the heart of the Middle East, to the mountains of Tajikistan where charismatic Australian scientist Dr Ken Street – a real life version of Indiana Jones - and his team of ‘gene detectives’ hunt for plant genes that will help our food withstand the impact of 21st century global warming.

Along the way we meet farmers around the world who are struggling to grow crops in a climate that’s gone haywire, as well as scientists working at the front line of gene technology to save tomorrow’s food. At journey’s end, deep in the Arctic Circle, Ken deposits his bounty of seed in the newly constructed seed bank known as the ‘doomsday vault.’



### INTERNATIONAL SALES

#### National Geographic Television International

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### NON THEATRIC AUSTRALIA SALES

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Principal Investor



Australian Government  
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## Synopsis

You'd have to have been hiding under a mushroom to miss that climate change is now a key issue for Australians.

Whilst its effects are only just emerging, one of the fundamental questions keeping scientists on their toes is: what to do when it seriously starts to affect the crops that feed us?

As Australia and much of the world wrestles with hotter weather and a dwindling water supply, mass starvation at a global scale is on the cards if we can't find ways to improve crop resilience. Scientists are exploring many solutions to adapt our food supply, including going back to mother nature herself to locate the genes that can withstand our changing climate; genes that, thanks to a high yielding monoculture, have almost disappeared.

Australian scientist, Dr Ken Street, aka the 'Seed Hunter', spends his life searching for the tiny seeds that could play a role in helping food producers around the world.

This film follows Dr Ken, the Indiana Jones of agriculture, on a journey from the drought-ravaged farms of Australia, to the heart of the Middle East, to the mountains of Tajikistan. It is in the former Soviet republic of Tajikistan that he and his team of 'gene detectives' are most likely to find seeds like the elusive wild chickpea that can survive in temperatures of 40 degrees above and below zero. Sounds simple enough until you realise that land clearing, urbanisation and modern farming systems have all but wiped out these ancient food sources. So the chances are slim, but well worth taking.

While Ken urgently hunts for genetic secrets in Central Asia, we meet wheat farmer Ian McClelland in Australia who is struggling to grow crops in a climate that's gone haywire and scientists at CSIRO Canberra who are on the front line of discovering tomorrow's food.

Young postgraduate student, Caitlin Byrt is part of a team at CSIRO that's found two genes that code for salt tolerance in pasta wheat – in an ancient wheat collected by the likes of Ken Street. They are attempting to get the genes into modern day wheat so that future crops can be grown on salt affected land.

But the prize for "Seed Hunter" Ken Street is the rare wild chickpea whose tough resilient genes could help transform modern chickpea enabling it to be grown by more people. His quest to locate the wild plant consumes much of his adventure on the road.

At journey's end, Ken travels deep into the Arctic to deliver his precious bounty of seed to the impenetrable 'doomsday vault', built as a back up for the world's seed supply of every food type known to human kind.



## PRODUCTION STORY

In conversation with Director Sally Ingleton

Over two years ago, Sally Ingleton heard a radio interview about Dr Ken Street, an Australian scientist on a mission to seek out ancient seeds. This fired up the documentary director's imagination with images of exotic landscapes and adventurous travels. And it marked the start of a long journey that involved funding from five different countries and trips to far-flung destinations from the remote mountains of Tajikistan to the bustle of New York and to the icy Arctic.

Sally has always harboured a passion for telling universal stories that explore environmental issues and the human impact on the natural world. After tracking down Dr Ken Street in Syria and learning about his international band of 'Seed Hunters', Sally knew that this was the perfect subject to explore the ever increasing concern about the affects of climate change on food production.

Sally had embarked on the *Seed Hunter* documentary before the release of Al Gore's celebrated film *An Inconvenient Truth* and there was general reluctance on the part of the television broadcasters to commission anything mentioning the E-word. As Sally recounts 'It was a hard sell initially, there was little broadcaster interest in anything to do with the environment.' Sally persisted and held her belief in the positive angle to this story: far from being all gloom and doom, Dr Ken and his team were using science to find practical and, more importantly, life saving solutions to some of the biggest problems facing the world today. Sally's intuition proved to be right on the money as soon, public sentiment had swung right round and there was a huge hunger for anything that looked at climate change issues.

As the affects of extreme weather events, rising food costs, and a continuing severe drought took effect, suddenly everyone was talking about climate change and its impact on our food sources. Moreover *Seed Hunter* offered hope in the form of the charismatic Dr Ken who was working out in the field and bringing the results back to the lab.

One of the great challenges for Sally and her experienced editor Tony Stevens was finding the right balance between the adventures of the team of scientists out in the wilds of Tajikistan with the scientific work back in the lab. For Sally it was crucial that she took the audience on an entertaining ride, so the approach was to prioritise the drama and action. Using science elements to back up the narrative.

The result is an engaging science adventure story that has been nominated for *Best Science, Environment and Technology Documentary 2008, Australian Teachers of Media Awards*.



## DIRECTOR'S STATEMENT - SALLY INGLETON

Over the past eight years my personal interest in documentary projects has revolved around telling science and environment stories. We humans are having a great impact on the natural world but fortunately there are lots of scientists out there trying to find solutions. For me it's important to tell a story that alerts people to a pending crisis but softens the blow by offering a solution.

In early January 2006 I heard Dr Ken Street on the radio. I was amazed to hear that many of our basic crops are under threat from climate change and that solutions can be found by going back to Mother Nature and the old ancient farmer varieties and wild relatives of our food. But the diverse genes found in these seeds are fast becoming extinct as modern agriculture - and all it promises - takes over much of the world. I was fascinated and jumped on the phone, tracking Ken down on the other side of the world at his home in Syria.

With help from the ATSE Crawford Fund, GRDC, ACIAR, CLIMA and ICARDA I scrounged enough funds to take a crew to film Ken and his seed hunter expedition. It was an amazing 5 week adventure from the deserts of the Middle East to the mountains of Tajikistan. In Tajikistan we camped everywhere and had to wash in freezing mountain streams. It was a lot of fun and everywhere we went the Tajiks would give us food, vodka, and share their ancient seeds. They all understood the importance of the work of Ken Street and his team. But adventure aside - it was a shock to see how climate change was having an impact in this remote part of the world. So many farmers were suffering from drought, lack of rain and an influx of new pests and diseases that were destroying their harvests.

Since late 2006, climate change has been on everyone's lips. The drought has highlighted the plight of farmers struggling to grow food without reliable rain. Events such as Cyclone Larry wiping out Australia's banana crop and the spring frosts that damaged much of Victoria's stone fruit harvest and of course the on going drought have exposed the vulnerability of our food production to the general public. This debate will accelerate as food security becomes a global concern.

The importance of genetic diversity to our future food is well understood by all farmers. The Australian Federal Government has generously donated to the Global Crop Diversity Trust that has been established to protect samples of the world's most vital seeds. The Svalbard Seed Vault - also known as the 'doomsday vault' recently opened in the Arctic as a back up to the world's supply of seeds.

Whilst biotechnology methods are used to locate the genes in most cases the genes are bred into new crop varieties using conventional means. Regulation prohibits the commercial use of any GMO food crops in Australia except for cotton and now canola. As growing food becomes more challenging around the world it will be interesting to see whether the perception of GM crops changes.

## THE CHARACTERS



**Dr Ken Street** - "People go to war over oil, people go to war over gold and yet oil and gold are actually of lesser importance than food...there's going to be a lot of stories about hungry people."

Ken Street is a 44-year-old Australian scientist, based in Syria for the past 10 years. Ken works at the International Centre For Agricultural Research in the Dry Areas (ICARDA). Fearless and charismatic he devotes his time to scouring ancient villages and valleys in Central Asia and the Caucasus looking for rare and wild crop seeds. He is accompanied on the journey to Tajikistan by a team of gene hunters from Australia, USA, Armenia and Russia. Ken's work is largely funded by ACIAR and GRDC.



**Barbara Hellier** – "We don't know how this material is going to be used and that's why we collect it. Because we're preserving things for the future."

Barbara Hellier works for the US Department of Agriculture and specialises in allium. (Plant species of the onion genus).



**John Sheppard** – "We would have no idea of the potential that is in this paddock alone. If we don't collect it, it's at our peril."

John Sheppard is an Australian wheat breeder who accompanies Dr Ken on his journey in Tajikistan.



**Caitlin Byrt** - "The climate is going to change very quickly, it's going to happen rapidly and that doesn't give plants a chance to evolve."

Caitlin Byrt is a 7-year-old PHD student working at CSIRO in Canberra developing salt tolerant pasta wheat using genes from an old farmer variety of wheat from Central Asia.



**Ian McClelland** - "I always get up in the morning and check all the weather sites, see what's happening. So you're always building up your hopes that the rain at the end of the week is going to happen..."

Large-scale Australian farmer desperately in need of drought proof wheat in Victoria's Wimmera.



**Ahmed El Maz Rouei** - "Look at my wheat. There's hardly any grain in it. I didn't even get back the seed I planted. What can I do? Nothing."

Subsistence farmer in Syria having severe trouble with his crop due to drought. Head man in his village with a large family of over 20 to look after.



## TALKING POINTS

### **Climate Change & Future Food Security**

Arguably, the greatest challenge mankind has ever faced is upon us now. As climate change marches ahead at a seemingly unstoppable pace, the implications for the world's food supply are enormous and enormously frightening. With their commitment to finding the ancient seeds that will assure future food security, Dr Ken and others like him are on the front lines of this battle; a battle humanity simply cannot afford to lose.

### **Biodiversity & Future Proofing Food Sources**

Often used as a measure of a biological system's well being, it is universally agreed that biodiversity is the key to future proofing the planet's food sources against climate change and other environmental occurrences. Dr Ken and his team of 'gene detectives' play a vital role in this process.

### **Genetically Modified Crops**

Despite their much-maligned status, genetically modified crops may yet play an important role in the future of the global food supply. Will the imminent food crisis change the way people view this controversial area of agriculture?

### **Gene Banks**

What are gene banks? Why is it important to store and protect the supply of the ancient crop seeds and wild relatives of our food for future generations? Where do these gene banks exist? The recent opening of the Svalbard Seed vault in the Arctic attracted unprecedented attention as media crews from all over the world swarmed to witness its construction.

## WEBSITE LINKS

Australia's Commonwealth Scientific & Industrial Research Organisation (CSIRO)  
<http://www.csiro.au>

Global Crop Diversity Trust  
<http://www.croptrust.org>

International Centre For Agricultural Research in the Dry Areas (ICARDA)  
<http://www.icarda.cgiar.org>

Food Standards Australia and New Zealand  
<http://www.foodstandards.gov.au>



## BACKGROUND & HISTORICAL NOTES

### **The Fertile Crescent & the Origins of Agriculture**

The Fertile Crescent is an area of land covering approximately 4.5 thousand square kilometres. Today, this area corresponds to Israel, Lebanon, Egypt and parts of Syria, Iraq, Jordan, Kuwait, Turkey and Iran. Also known as the 'Cradle of Civilisation', the region earned its auspicious title as a result of the agricultural, political and economic developments that began in this crescent shaped area of land. Key to these developments were the Euphrates, Nile and Tigris rivers upon whose banks, it is said, humans first started to settle and farm.

Today, the population of the Fertile Crescent is approximately 120 million people, or at least a quarter of the Middle East and is an agrarian region seriously under threat from the effects of climate change. Scientists fear that by the end of the century this historically fertile sliver of land could dry up, leaving regional farmers high and dry. Which is why scientists like Dr Ken Street are so keen to find land race seeds from this ancient place – as soon they may be gone for good.

Amongst the myriad of difficulties Dr Ken and his team face, not the least of them is that this area is currently in great political conflict, making the scientist's jobs all the more difficult and dangerous.

In addition to the Middle East, Ken spends much of his time hunting down ancient seeds in the genetically rich regions of the Caucasus and Central Asia.

### **The Arctic Seed Bank & the Global Crop Diversity Trust**

Answering calls from the international community to protect the world's crop diversity, the Global Crop Diversity Trust has built an enormous seed vault designed to house duplicate copies of the world's seed collections. As threats from war, natural disasters, climate change, inadequate funding and management are increasing, the world's bio-diversity is becoming more vulnerable. Every time disaster strikes, many of the world's unique species are wiped out forever, greatly impacting on the world's food supply. What the Svalbard Seed Vault aims to do is insure the world against the loss of any more of these varieties by combining many of the world's existing seed collections and storing them in an impenetrable facility.

The vault is dug into a mountainside near the village of Longyearbyen, Svalbard, a group of islands nearly a thousand kilometres north of mainland Norway. For nearly four months a year the islands are enveloped in total darkness. Permafrost and thick rock will ensure that even without electricity, the samples will remain frozen. The vault's construction has been funded by the Norwegian government as a service to the world community. The Global Crop Diversity Trust considers the vault an essential component of a rational and secure global system for conserving the diversity of all our crops. The Trust is therefore committed to supporting ongoing operational costs, and assisted developing countries with the preparation, packaging and transportation of their representative seeds to the Arctic.

## PRODUCTION TEAM



### **Producer and Director, Sally Ingleton**

Sally is a partner in the Australian company 360 Degree Films. As well as doing stints as a film bureaucrat and teacher she has been producing and directing award-winning documentaries for the past 20 years. Specialising in science, arts, history and social issues Sally has made programs for BBC, Channel 4, Discovery Channel, National Geographic, ABCTV, SBSTV, and NHK.

Sally is currently producing *Murder in the Snow* – a 1 hour documentary about a fatal shooting of a Tibetan teenager on the Chinese border (SBS/BBC/TSR/YLE/RTBF/NGTI) and *Community Cop* (SBS/Film Australia) about a community policing program in inner city Melbourne.

In 2007 Sally produced *2 Mums and a Dad* (SBS), which won Best Documentary at the Sydney Film Festival Dendy Awards and Best Documentary at the Australian Teachers of Media Awards.

In 2006 Sally produced *Welcome 2 My Deaf World* (SBS) which was nominated for Best Documentary at both the Australian Film Institute and Australian Teacher's of Media Awards. It won the most popular film at the Real Life on Film Documentary Film Festival Melbourne.

Other work include: *Muddy Waters: Life and Death on the Great Barrier Reef* (SBS) which received much international acclaim and won the coveted Jury Prize at Japan's top environment Festival Earth Vision as well as the Best Environment and Conservation Award at the Japanese Wildlife Film Festival. It was also nominated for a UN Media Peace Prize, and short-listed for Best Documentary on sustainable development at the British Environment and Media Awards.

*Painting Country* (Produced by Electric Pictures for NHK/SBS) that followed a group of Aboriginal artists on a journey back to their traditional country in Australia's Great Sandy Desert. It sold widely and won the silver Chris Award at the Columbus Film festival.

*Mao's New Suit* (SBS/Ch4) charts the course of two Beijing fashion designers as they launch themselves on the Shanghai market. It won Best Documentary at Chicago and was nominated for Best Documentary at the Hawaii and Sydney International Film Festivals.

*The Tenth Dancer* (BBC/ABC) was about the rebuilding of the Cambodian ballet after Pol Pot. It was invited to over 20 international film festivals, including Cinema Du Reel and winning awards in Japan, Chicago and San Francisco (Golden Gate Award) plus a nomination for Best Documentary at Hawaii International Film Festival. It won Best Documentary 1994 Australian Teachers of Media Awards.

### **Director of Photography – Philip Bull**

Phil Bull is one of Australia's most experienced documentary cameramen. He has a track record that spans over 30 years including AFI nominations and awards. Phil has worked on several of Ingleton's previous films including *The Isabellas*, *Silk and Steel*, and *Muddy Waters: Life and Death on the Great Barrier Reef*. His other credits include *Alien Underworld*, *Under The Hammer*, *Bondi Rescue*, *The Kindness of Strangers*, *Shipwreck Detectives*, *Desperately Seeking Sheila*, *Land of The Morning Star*.

### **Editor - Tony Stevens**

Tony is one of Australia's most respected and experienced drama and factual editors. His credits include the documentaries *Hunt Angels* (AFI Best Documentary) *Revealing Gallipoli*, *The Hit Game*, *Vietnam Nurses* (AFI BEST EDITING Nominee), *Two Men and a Baby*, *Inheritance*, and Ingleton's *Mao's New Suit* and *Muddy Waters*. TV Dramas include *My Worst Best Friends*, *L'il Horrors*, and the feature film *Road To Nhill*.



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ABC Library Sales

ITN Source/Reuters



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