

TARGET: Zero Hunger

Episode 4

Pulses: Orphan Crop of the Super Foods

[Sandra] Hello and welcome to the fourth episode of Target: Zero Hunger -- a podcast that explores the food challenges and solutions of our time, brought to you by the UN's Food and Agricultural Organization. I'm your host, Sandra Ferrari.

[Pulse beat in]

[THEME MUSIC in]

Over the next 20 minutes or so I'm going to walk you through some fertile ground.

We're going to explore the ideas and perceptions concerning one of our world's most powerful super foods....

A crop that has ancient origins and modern relevance.

An unexpected ally against climate change.

The pulse.

[THEME MUSIC out]

[Sandra] FAO is "full of beans!" – meaning *very* excited - about the UN's international year for 2016.

But the pulse is a crop that for all of its potential utility for to us human, some farmers have abandoned it for more profitable gains. And consumer demand – or the lack thereof – raises questions as to why this crop isn't getting the recognition it deserves.

In this episode, we'll explore why one of our most nutritious foods has become...an orphan crop and we'll talk to some of the people trying hard to change that.

But first.... We address the most pertinent... what exactly is a pulse?

[Teodoro Calles CLIP in] Pulses are crops that belong to the legume family and are harvested for dry grains. Legumes harvested for oil or seeds, or used as vegetables are not considered pulses. **[Teodoro Calles CLIP out]**

[Sandra] That is Teodoro Calles, an agricultural officer with FAO in Rome. We'll hear from him a bit later in the episode.

The problem with pulses is that in everyday common use, a lot of varieties of vegetation get mixed together and referred to as pulses.

This can lead to some confusion as to what a pulse actually is.

According a 1994 classification list compiled by FAO, there are 24 varieties of plants considered as pulses.

Crops named on that list include: the African yam bean, chick peas, Dry beans – like kidney beans - pigeon peas, lentils... as well as some lesser known varieties like velvet beans, what's known as the "common vetch".

But issues between distinctions don't just end there.

I spoke with a representative from the global pulse confederation to explore that bit further.

[Paulina Ceballos Clip in] Hello my name is Paulina Ceballos. I am based in Rome, but I am Mexican national. And I am working with the global pulse Confederation to help with this celebration campaign of the international year of pulses. **[Paulina Ceballos Clip out]**

[Paulina Ceballos intv in]

[Sandra] I asked Paulina whether promoting pulses was a challenging endeavour, and she raised a good point.

[Paulina] In the first place, "pulses" is not unknown word in English, and there are many confusions, as well in other languages. In Spanish they could be calling them Leguminosas, or legumbres secas. And in French and Portuguese – Legume or legumineuse. So that's one of the things that the international year can help. At the end, the bottom point is, it doesn't matter how you want to name them the important thing is that you consume them and that you understand that when you do it you're benefiting the environment at the same time.

[Sandra] What are the main issues concerning pulses in developing countries?

[Paulina] In developing countries, I would say the supply/demand factor. So India is one of the biggest producers in the world but also one of the biggest consumers in the world. And their population is also growing so they are facing a panorama, which is a food security threat. So pulses are a big part of their diet. We don't need to educate them about pulses and how to cook them, but we need to help them to produce more and also to face any barrier markets that are facing countries such as India. Or in Latin America, Central America, we have there the dry lands. A problem which is known as known as "el corredor seco". In Honduras, and in Guatemala's - beans are important crop there. So we also need to help farmers to improve their techniques so they can produce more beans and stop abandoning lands because that's what, in fact, is happening.

[Sandra] In countries where pulses *are* grown but are not widely consumed – pulse consumption among Canadians for example - is very low, though Canada is the second largest producer next India. To what extent do you think that negative perceptions drive the lack of consumption?

[Paulina] I wouldn't say that there is some negative perception but more like a lack of awareness of the nutritional properties. So people know what lentils are or what beans are, but probably they are not aware of all the nutritional properties that they are full of proteins

of vitamins and fibre. Also it could be they don't know how to cook them. So it's easier to just go and grab a steak or cook a bowl of pasta then just to put the beans to soak and then to boil them so probably it's also due to that, but the ready-made products are available in the market just like a can of beans are as nutritional as the ones that you cook from scratch in your home. And maybe a third reason which is something more recent. It's some diets that are getting lots of attention for, example Paleo diets that are just prohibiting some foods. So, if you don't have any dietary restriction then I don't see why you would not want to consume these crops that had been consumed since Egyptian times and that are proven to be so good for you.

[Sandra] Which regions and cultures incorporate pulses into their diets and why?

[Paulina] I would say developing countries consume pulses - pulses are a part of their culinary traditions. So for example we have Daal that is cooked in many ways in India, in Nepal. We have chickpeas that are the special ingredient in humus, which is cooked in the near East countries. And then we have the beans and rice combination that is very present in Latin America. So it's called: amaras pinqio, moros con cristianos in Cuba, ouves con friholes in Mexico – in Mexico we consume it with eggs. So it's part of a tradition in the cuisine. I once heard a story of two Brazilian students that were on an international exchange in the USA and they were thrilled with all their different foods that were available there. But after some time they were like “where can I find beans.” I want a “fashuada” And that's how big it's in the heart of that the people who consume it since they are kids.

[Sandra] Ms. Ceballos, thank you for your time.

[Paulina] You're very welcome it was a pleasure and thank you for the invitation and have a happy international year pulses.

[Paulina Ceballos intv in]

[Sandra] The way pulses are used around the world is as varied as our cultures, of course. Luckily, I work in a culturally diverse environment, so I took to the hallways of FAO to ask a few colleagues about their ethnic backgrounds and what types of pulse dishes they enjoy from their countries.

[FAO interviews in]

[Sandra] Where are you from?

[Umer] I was born in Pakistan and then migrated to Canada.

[Sandra] And your parents are from Pakistan?

[Umer] Pakistan-India, Subcontinental Asia

[Sandra] Did you know that Canada is one of the second largest producers of pulses in the world?

[Umer] I did know that Canada did produce a lot. I also did know that the subcontinental Asia also produces a lot. And that's the reason why the sub-continental Asia is so engrained into eating pulses and vegetables and so on.

[Sandra] Growing up did you eat food native to Canada or Pakistani cuisine?

[Umer] We had both at our house, because that's just the environment that we lived in, however I've been really exposed to the Pakistani-India subcontinental native cuisine, because obviously my mother used to cook that and I used to like it. And what was your favourite, pulse-based Pakistani dish growing up?

[Sandra] What was your favourite pulse-based dish growing up?

[Umer] It was one of the most standard ones which was Daal Chawel, which is really lentils and rice. And it's really a standard kind of a dish because it's really what the population in general can afford in the subcontinent, so I would eat that. So I like that because it's just a simple kind of a dish and we always enjoyed that at our house.

[Crowd sound]

[Sandra] What's your name and where are you from?

[Aysegul] My name is Aysegul Akin and I am from Turkey.

[Sandra] And what role do pulses play in Turkish cuisine and culture?

[Aysegul] In Turkey we consume a lot of pulses in different ways, using different recipes. For us, soup is very important main dishes, therefore we use a lot of pulses to cook soup – Like lentils, beans, peas, chickpeas – so they are the main items that we use in soup, but also dry beans is also one of the famous Turkish dish - Kuru fasulye- we use a lot. And also chickpeas we use it for some aperitifs. It is called humus. So these are the main items as it is full of iron and it contains lots of vitamins. And the international year of pulses was actually proposed by Turkey because of a lot of consumption and a lot of production.

[Sandra] With the launch of the international year, there was a big awareness campaign for pulses, in Turkey. And I wonder- because Turkey has such a rich tradition of using pulses – why an awareness campaign is even needed.

[Aysegul] Well actually there are two issues. First of all, as now, the young generation prefers to eat fast food, quick one and not at home. So, it's a campaign to create again awareness for traditional food but also because of production value, production level. So, to create awareness around the world actually, among other countries related to trade purposes I guess. But mainly, for the young generation as pulses contain a lot of vitamins and they are important for our diets.

[Sandra] What is your favourite dish, pulse based dish?

[Aysegul] Lentil Soup. I cook a lot and I have a lot because I'm also celiac. Therefore, for me, it is really good that I can get all of the vitamins from the lentils.

[Crowd sound]

[Sandra] What is your name?

[Anais] My Name is Anais Hotin.

[Sandra] Where are you from?

[Anais] So I was born and raised in France, but my parents are from the French West Indies. The two islands are called Antique, in French, and so I am from Guadeloupe.

[Sandra] So, when you were growing up, did you eat a lot of French Cuisine or West Indian cuisine?

[Anais] My parents, they were cooking a lot of both cuisines. They were cooking French cuisine and Guadeloupian cuisine.

[Sandra] And were there a lot of pulse based foods?

[Anais] Yes. I do like a dish. It's a soup made of Lentils and carrots and green peas.... And a bit of chili. And all that mixed in a soup with a meat. It was just excellent and very filling. Because you know when you eat that at noon. You won't get hungry by four and six. You know you will be fine until at least eight o'clock.

[FAO interviews out]

[Sandra] Not too long ago archaeologists and archaeobotanists unearthed beans that had been somehow preserved in areas we would know today as Israel and Turkey.

The pulse found in Turkey, for instance, were from the Neolithic period – otherwise referred to as the “new stone age” which started in about 10, 200 BC.

To put things into context: that was a point in history where - for the first time - Homo Sapiens were the only human species in existence. Farming communities were just beginning to appear. And while cultures around the world were different in many ways during this period. Some regions had not even begun to use pottery technology.

But THE PULSE had been domesticated.

In and of itself this extraordinary discovery of ancient pulses by scientists also found that despite having existed thousands and thousands of years ago... the pulses still maintained their nutritional properties.

That brings me to the modern day relevance of the pulse.

[Montage of Chefs IYP greetings]

[Sandra] You just heard the voices Chef She Zengtai of China; Chef Helena Rizzo of Brazil; Tanzania's Veronica Jackson; as well as leading Moroccan chef, Mohamed Fedal.

Next month FAO will be releasing a new book about PULSES... to mark the international year.

With the support of well-known food journalists Luis Cepeda and his son Saúl Cepeda of Spain... the book will take readers on a culinary adventure around the globe with pictures, infographics and interviews with famous chefs from every region.

Culinary contributors include the likes of Chef Ron Pickarski of the United States... one of India's leading chefs Sanjeev Kapoor... Pakistan's Zubaida Tariq and Turkey's Didem Şenol Tiryakioğlu. These latter two countries – Turkey and Pakistan are, in fact, leading the international year.

Each food expert cooked up recipes for readers and dished out some pulse based anecdotes for those hungry to know more.

I spoke to Saúl about his thoughts on the relevance of pulses in today's modern diet.

[Saúl Cepeda intv in]

[Sandra] So basically you're trying to inspire people to grow their love for pulses.

[Saúl] Well, yeah, of course, because we have a great nutritional challenge in this century. Hundreds of millions of cases of obesity, we have to contrast this with a greater number of people suffering from hunger, and there are a lot of unhealthy diets and food waste. I think pulses are a kind of solution for all this because pulses are a natural nutritional complex, packed with a lot of micro-nutrients and vitamins and minerals and we have a kind of food that is cheap and is accessible for people. They have a lot of advantages and we have to communicate that.

[Sandra] And in your research, what novel or quirky or interesting ways have people used pulses in their cultures and diets.

[Saúl] Pulses are a super food... that have kind of a secondary effect. There are a lot of methods worldwide to avoid flatulence with the consumption of pulses. And when you start to research the gasometry of different places, you start to discover that they use a lot of ingredients to avoid this. For instance, in the north of Africa you find that cumin is a common spice used for that, not only for the flavour, but if you use the seed, the full seed.... In other places you find coriander... epazote, liquorice, fennel, ginger, citronella, peppermint, the nutmeal, the basil, margarine, oregano... things like that, and it is very, very curious.

[Sandra] You can add spices to beans in order to reduce flatulence?

[Saúl] Ya! You can do it. And there are also other methods that are only involved with the cooking. We have been in touch with a lot of chefs from different countries. Every chef has a title of "pulse keeper" because we want them as kind of representatives of this idea. We have been in contact with 10 chefs all over the world representing every region.

[Sandra] Are there particularly negative perceptions of pulses on the consumer side?

[Saúl] I think there is a kind of perception that pulses are a product for poor people. I mean, pulses are very important for poor countries because they are cheap and you can produce a lot of pulses which are very nutritive and all of that. But pulses are also very important for diets in the developed countries - to avoid obesity and over feeding. All of the problems that we have in the European Union and the United States, and all of the western world. And I think there is a kind of a strange perception of pulses that's completely wrong. I have been playing, for instance, a video game and it's about the Mesolithic era. And when you're playing you can feed yourself, but the diet is based only in meat. There are no gathering of plants – something completely wrong in anthropological terms – but I think this is the perception that we give about the plants. And I think this is a problem. In fact, if you check the Whatsapp or The Line or one of those apps, you will find that there are no emoticons about pulses. You can find fruit, you can find a lot of vegetables, you can find meat, you can find potatoes, but you're not going to find a bean.

[Sandra] Interesting. I didn't even realize that actually.

[Saúl] And I think it is something about let's say. Something under the radar. A subconscious mind that we have against pulses.

[Sandra] I'm just checking my phone now, there are absolutely no pulses! It's incredible. Thank you so much Saúl.

[Saúl] Thank you very much.

[Saúl Cepeda Intv OUT]

[Sandra] That was Saúl Cepeda speaking with me about his thoughts on the relevance of pulses in today's modern diet; as well as the book him and his father – Spanish food journalist Luis Cepeda- are researching for FAO in support of the international year of pulses.

For more information on the book, you can visit fao.org forward slash pulses hyphen 2016.

So - From a culture perspective the nutrition benefits of pulses have been outlined by out experts throughout this podcast, but from the perspective of farmers who incorporated pulses into their cropping system... are there any difficulties posed by planting pulses?

[Fritz] When you're growing some culture, there can always be some problems with illness or something like that, but I think when you get good information to farmers all over the world it helps to grow this culture with a good success. I'm very glad that this year is the year of the pulses. As a culture we don't talk about it enough. And it's a good opportunity to get this culture informed of the discussion.

[Sandra] That's Fritz Glauser. He is a farmer in Switzerland. President of the Swiss Pulses Producers. Vice President of Swiss National Farmer Union. And a member of the board for the World Farmer Organization. He has quite the farming legacy behind him.

[Fritz Glauser intv in]

[Fritz] We have been farmer from father to son. Grandfather to father to son. And my sons are already on my farm working with me.

[Sandra] What kind of crops do you grow?

[Fritz] On my farm we got wheat, barley, maize. Also we get protein beans. Rapeseed. And we've got, for the animals, clover.

[Sandra] Is it difficult to grow pulses?

[Fritz] No! It's a good culture for shifting cultivation. Each year we change the culture on the same field so that we can produce with less help of fertilizer. We produce with less inputs from chemicals. So I think it helps us get a real sustainable production.

[Sandra] And when it comes to the final product, once you've harvested the pulses. Is it difficult to sell them or distribute them?

[Fritz] No, the market is good for this product.

[Fritz Glauser intv out]

[Sandra] A bit earlier we heard from Teodardo Calles an agricultural officer with FAO in Rome about what exactly constitutes a pulse.

A spoke with him a bit more about the importance of the pulse from a food security perspective.

[Sandra] What are the advantages of pulse crops for food security?

[Teodardo Calles intv in]

[Teo] Well there are different advantages for example in nutrition. They have a high content of protein, also they are rich in minerals, different minerals that can really bring input to healthy diet. They can also fix nitrogen, which means they can also work to improve soil health. They can also be stored for a long period of time without losing their nutritional value. And they can be easily produced for subsistence farmers, which make them a good option for small farmers who may not be able to afford other things.

[Sandra] Why is pulse production down in some countries?

[Teo] Ok, one of the main reason for low pulse production is that in those countries where industrialization has been going on. Many small farmers or the kid of small farmers have left the fields to go into cities. Meaning, those farms cannot continue. Also, one of the reasons is that patterns of consumption have been changed. People now eat also other things. However, we can also say for example that in western countries, we can also say that consumption levels have also increased, because people that are eating more consciously – for example vegetarians – they use a lot of pulses because they need something to supply protein.

[Sandra] Would you say that the added value of pulses is widely recognized by farmers and researchers?

[Teo] Yes, it has been recognized. Unfortunately, due to the different aspects of development, changed patterns of consumption.

[Sandra] Different developments such as?

[Teo] For example what I have already mentioned. In those countries that have been industrialized, people have more money and then they can afford different sources of protein like cheese meat, that before, couldn't be afforded. But we expect in this international year of pulses that we can raise awareness in order that people remember that pulses are a really important part of a healthy diet.

[Sandra] How do pulse crops contribute to climate change mitigation?

[Teo] Ok – in the case of mitigation, pulses can fix nitrogen for the atmosphere, which is a very important nutrient. And the manufacturing of nitrogen needs a lot of energy, which mean there will be a release of greenhouse gasses. This nitrogen that is fixed by the pulses, can subtract let's say the fertilizer that you would put in the field. That means you are saving fertilizer and indirectly you are mitigating climate change. But also, not only mitigation, but we could also adapt to climate change because pulses have a broad diversity from which you can select new and improved varieties. For example if you need a variety to grown in higher temperature and dryer sun. You can select for this type of diversity.

[Sandra] So as climates are changing and pulses can't be grown where they were traditionally grown, they can be bred to do so.

[Teo] Exactly.

[Sandra] Can you give me an example of how FAO is collaborating with others to use pulse effectively?

[Teo] Well, I think that the most important contribution of FAO to pulses, is that FAO has been working in the International Treaty for plant genetic resources. We try to ease the transfer of genetic material. Between countries, between institutions. And we have several gene banks worldwide who have harboured a huge amount of genetic resources of pulses. And these genetic resources are the source, which can be used – for example- for adapting to climate change. And thanks to this treaty now if I'm here, let's say in India, and I want to try to develop a new variety from beans, then I can go to a gene bank and ask and then based on this treaty they can just freely send this material to that country, so that country can research and probably develop a new variety.

[Sandra] Sorry, this was not possible before?

[Teo] No.

[Sandra] Can you explain that a little?

[Teo] Well, before, genetic resources was for the use of human kind. And in the 90s, in the convention of biological diversity, genetic resources belonged to each country. That means that each country would have the right to say you CAN access or you CANNOT access these

genetic resources. But, since FAO was afraid that it could be a danger for some of the resources that are needed for the whole population – the world population – they decided to make this treaty and put in an annex a number of crops that every country agree can be transferred between countries without much effort. Like, you make a material transfer agreement in which you declare that you won't do anything commercially. The first is research, education and training. And then with that you can, for example, try to develop new varieties. And the moment you develop a new variety and you commercialize it, then you can handle with that country that provided this material to say "well I'm going to sell that and I will share the benefits that I have with you".

[Sandra] And how many countries signed that treaty?

[Teo] Most of them.

[Sandra] Mr Calles, thank you for your time.

[Teo] Thank you

[Teodardo Calles intv out]

[Theme music IN]

[Sandra] As we heard from experts in this episode, pulses contribute to food security at all levels, for their health benefits, climate friendly chemical properties... and general amicability and ability to get along with our soil and other crops in the fields.

No doubt about it pulses are "cool beans"... if I can add a little North American pop culture reference there.

This episode has been produced by myself and Kim-Jenna Jurriaans.

If you have any questions or feedback for us please write to FAO-audio@fao.org. I'm Sandra Ferrari, thanks for listening.

[Theme music OUT]

If you would like listen to the full interviews from experts featured in this episode visit our webpage at www.fao.org/news/podcast for more information about this series.