

2019

国际澳洲坚果发展年会暨临沧坚果文化节

International Macadamia Annual R&D Conference  
& Lincang Nuts Culture Festival



**TITLE/题目: Welcome/欢迎**

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# What is the International Macadamia Research and Development Centre (IMRDC)

## 国际澳洲坚果研究与发展中心 (IMRDC) 是什么?

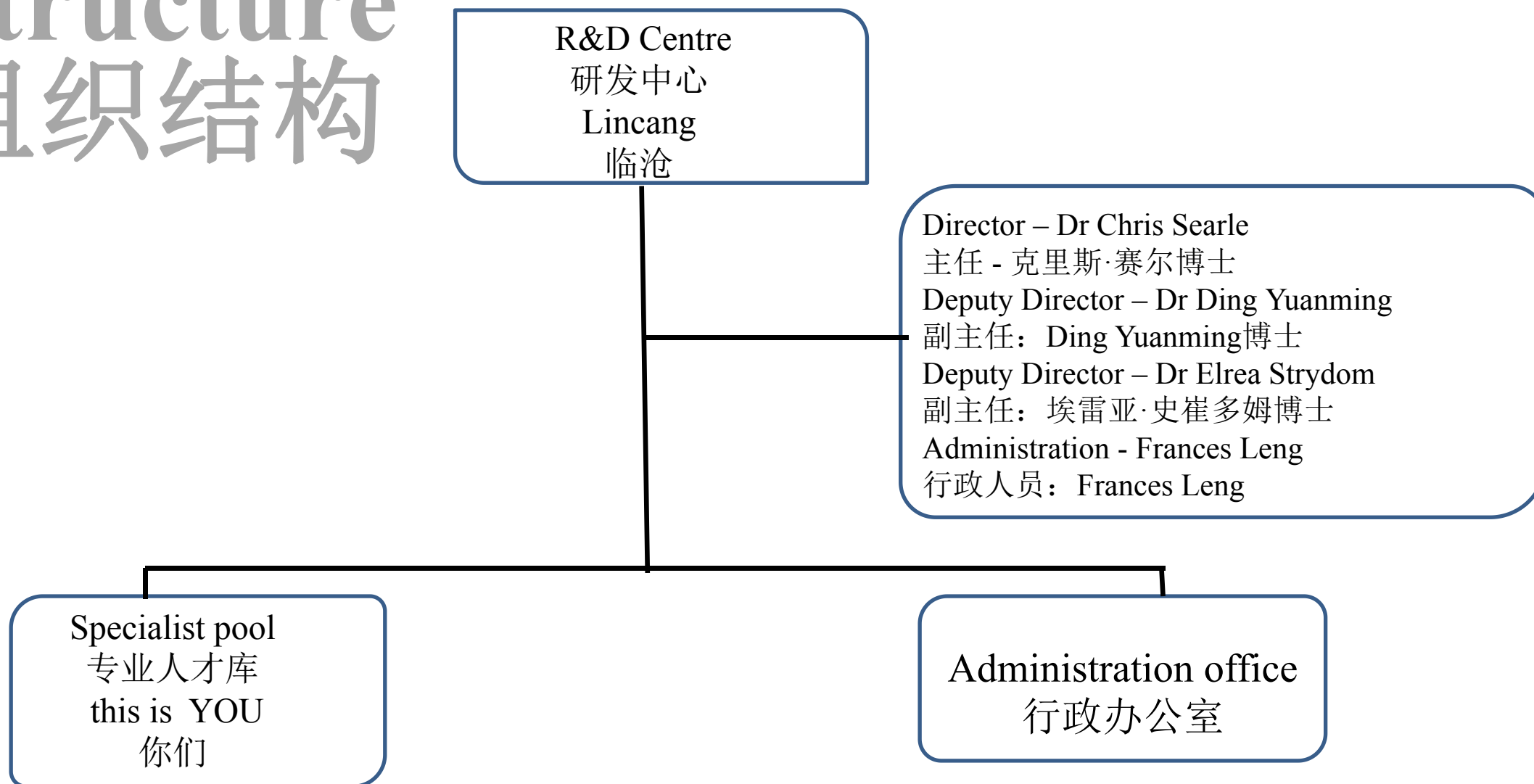
- Ongoing discussions for many years about the need for international cooperation in macadamia research – organisations such as AMS, SAMAC, YMS  
多年来, AMS、SAMAC、YMS等组织一直在讨论是否需要在澳洲坚果研究方面开展国际合作
- IMRDC formerly constituted in July 2018  
IMRDC原成立于2018年7月
- Creation of IMRDC announced at 8<sup>th</sup> International Macadamia Symposium – November 2018  
在2018年11月举行的第八届国际澳洲坚果年会上, IMRDC宣布成立
- Inaugural research meeting November 2019  
2019年11月举行了首次研究讨论会
- Centre is based in National Key Nut Testing Laboratory in Lincang  
中心设在临沧国家坚果类检测重点实验室
- Funded Lincang Municipal Government  
由临沧市政府出资

# What is the IMRDCs mission ?

## IMRDC的使命是什么？

- Bring together best researchers from around the world to work collaboratively to solve both scientific and technical issues in the world macadamia industry  
汇聚全球最优秀的科研人员，共同解决全球澳洲坚果产业的科技难题
- Stimulate and facilitate the sustainable development of the global macadamia industry  
刺激和促进全球澳洲坚果产业的持续发展
- Improve and promote the macadamia nut quality to ensure consumer confidence in macadamia products  
提高和提升澳洲坚果品质，确保消费者对澳洲坚果产品的信心
- Increase the production of macadamia nuts and their share of the international nut market  
提高澳洲坚果的产量及在国际坚果市场上的份额

# Structure 组织结构



# Three founding projects 三大创始项目

1. Online register of macadamia researchers and areas of expertise – Led by Dr Alyssa Chou, Hawaii  
澳洲坚果研究人员和专业领域的在线注册：由Alyssa Chou博士领导，夏威夷  
Objective: To develop list of invitees for meetings, collaborators for projects - risk management  
目标：制定会议受邀者和项目合作者名单：风险管理

Dr Chou is not here so please contact Frances Leng from the IMRDC with names and areas of expertise of people you know who are not on the expert pool list.  
Need to keep this updated

Chou博士不在这里，所以请联系IMRDC的Frances Leng，将您认识但不在专业人才库名单中的人员的姓名和专业领域告知Frances Leng。这一名单需要随时进行更新

2. Phytophthora diseases of macadamia – led by Professor Femi Akinsami, Australia  
澳洲坚果疫霉菌病-澳大利亚Femi Akinsami教授领导
3. Problem solver Phone app – led by Dr Chris Searle, Australia  
问题解决方案手机应用程序：由克里斯·赛尔博士领导，澳大利亚

Projects 2 and 3 are going to be discussed in greater depth later  
稍后将对项目2和3进行更深入的讨论

In addition to three founding projects we need to develop additional projects covering other areas  
除了三大创始项目外，我们还需要制定涵盖其他领域的其他项目

**HOW ?**  
怎么做？

**TOGETHER FOR  
BETTER!**  
携手共创美好未来！

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# Specialist pool of experts 专业人才库

This is where you come in - You are the experts - Your task is to expand the suite of collaborative projects

这就是您进来的地方——您是专家——您的任务是扩展合作项目

Some of the areas of expertise represented here today include:

今天在这里介绍的一些专业领域包括：

- Physiology  
生理学
- Plant nutrition  
植物营养学
- Plant pathology  
植物病理学
- Entomology  
昆虫学
- Breeding and Genetics  
育种与遗传学
- Nut quality  
坚果品质
- Remote sensing and  
遥感和
- Extension  
推广

Other areas not represented – need to be aware of when designing collaborative projects e.g. building economics into projects

其他未介绍的领域——在设计协作项目时也需要了解，例如将经济学运用到项目中

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# Project examples

## 项目示例

- Common set of leaf and soil standards around the world - common methodology for collection and analysis – standards by cultivar  
全球通用的一套叶片和土壤标准 - 通用的收集和分析方法 - 按品种划分的标准
- Maturity testing – problem with immature nuts entering the market – determine maturity by cultivar/province/altitude – photothermal quotient approach? - float test is it applicable? – delivered in extension package which includes **Economics** - how much money are famers losing by harvesting too early? Poor quality macadamias entering the market impact on all of us.  
成熟度测试 – 未成熟坚果进入市场的问题 – 通过品种/省/海拔确定成熟度 – 光热商方法? - 浮选试验是否适用? - 以包含经济学的扩展包交付 - 农民因收获过早而损失多少钱? 劣质的澳洲坚果进入市场影响了我们所有人。
- Cultivar identification – is cultivar identification consistent e.g. Is what were calling Beaumont (695) the same in South Africa, Kenya, Vietnam and the different provinces in China?  
品种鉴定 - 品种鉴定是否一致, 例如, 在南非、肯尼亚、越南和中国的不同省份, 所谓的博蒙特 (695) 都一样吗?
- Information delivery – to be **successful** the work of the **IMRDC** needs to have **impact at the orchard level** – how can we better deliver information generated by research to **improve peoples lives. This is why we are here - to make a difference to peoples lives**  
信息传递 - 为了取得成功, **IMRDC**的工作需要在**果园层面产生影响**——我们如何更好地传递研究产生的信息, 以**改善人们的生活**。这就是我们在这里的原因 - **改变人们的生活**

Don't forget multidisciplinary projects – how can multiple disciplines work together to solve complex problems?  
别忘了多学科项目——多个学科如何协同工作以解决复杂问题?

# Example of a multidisciplinary project area

## 多学科项目领域示例

Steep land agronomic systems approach (planting on slopes at altitude)

陡坡地农艺系统方法（在高海拔的斜坡上种植）

- Smallholder planting strategies – how do macadamias fit into a smallholder inter-cropping systems - macadamias and coffee, macadamias and bananas growing on steep land  
小农种植策略——澳洲坚果如何融入小农间作系统——澳洲坚果和咖啡，澳洲坚果和香蕉生长在陡坡地上
- Terrace production issues – How do you prune a tree to optimise light when one side backs onto a mountain ? Physiology/agronomy Use technology to model light?  
梯田耕作问题——当一侧背向山峰时，如何修剪树木以优化光线利用？生理学/农艺学：使用技术来模拟光线？
- Use geologists, and technology to determine what slopes can be terraced and what can't – earthquakes  
通过地质学家和技术来确定哪些斜坡可以成为梯田，哪些不能——地震
- Erosion control on slopes – soil is a precious resource – social licence to farm  
斜坡侵蚀控制——土壤是宝贵的资源——农场社会许可证
- What cultivars will suit what position in the landscape– past Hawaiian research and work in South Africa  
哪些品种适合景观中的什么位置——之前在夏威夷所做的研究和在南非所做的工作
- Altitude effect (temperature, vapour pressure deficit, light and light quality) - a better understanding of these fundamental areas will also benefit plantation production in developed countries  
海拔效应（温度、蒸气压不足、光和光的质量） - 更好地了解这些基本领域也将使发达国家的种植园生产受益
- Needs to be delivered in an easy to understand package that has impact  
需要以易于理解且具有影响力的包交付

**Why do we need multidisciplinary projects like this?**

为什么我们需要这样的多学科项目？

**Majority of production in a few years is going to come from smallholders growing on steep slopes - poverty alleviation**

未来几年的大部分产量将来自在陡坡上种植的小农户 - 扶贫



# Climate change - our greatest challenge 气候变化——我们最大的挑战

- Climate is predicted to change markedly in next fifty years – more extreme weather, changing rainfall  
据预测，未来五十年，气候将发生显著变化——更多的极端天气和不断变化的降雨量
- Macadamias long lived crop – commercial orchards >80 years old in Hawaii >50 years in Australia  
澳洲坚果是一种长期作物——夏威夷的澳洲坚果商业果园已有80多年的历史，澳大利亚的澳洲坚果商业果园已有50多年的历史
- Model impacts of climate change – how will it affect production areas, shifts in production, pests, diseases  
模拟气候变化的影响——它将如何影响生产区域、生产转移、病虫害和疾病
- Affect both plantation production in the developed world and smallholder production in developing world  
影响发达国家的澳洲种植园生产和发展中国家的小农生产

**While climate change will affect us all its not a total disaster – yet**  
虽然气候变化会影响我们所有人，但它还不是一场彻底的灾难。

- 50-75 million macadamia trees have been planted ? (need better statistics on trees planted - remote sensing). This is a fantastic carbon sink – we should promote this great tree planting program  
已种植的澳洲坚果树有5000-7500万棵？（需要获得关于已种植澳洲坚果树的更准确的统计数据——遥感）。这是一个不可思议的碳汇——我们应该推广这个伟大的植树计划
- Information on how much carbon is sequestered in trees? In soil under trees? How can we use shells sustainably ?  
关于树木中封存了多少碳的信息？在树下的土壤里？我们如何以可持续的方式使用坚果壳？
- Can we get credit for it – financial ? promotional (carbon neutral industry)?  
我们能因此获得信贷吗——金融？推广（碳中和产业）？

An area that needs urgent research – protect the industry going forward. Can we be a carbon neutral industry? Who is working in this area? Economic impacts and potential gains

一个需要迫切研究的领域——保护行业的发展。我们能成为一个碳中和产业吗？哪些人员在这个领域工作？经济影响和潜在收益

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# Task for small groups

## 小团体的任务

Outline three highest priority projects in your expertise area – could be global problems or problems affecting a few countries – don't forget potential emerging problems e.g Xylella

概述您专业领域中三个优先级最高的项目——可以是全球性问题或影响少数国家的问题——不要忘记可能出现的新问题，如木质部小菌

### Project outline

#### 项目概况

Why they are the highest priority? Two to three line justification

为什么这些项目的优先级最高？两到三行理由

Project collaborators and Resources (rough budget and timeframes)

项目合作者和资源（粗略预算和时间框架）

Possible funding sources

可能的资金来源

Outcomes for industry and impact

行业成果和影响

Short and concise - can use this to develop projects and approach funding bodies around the world

简明扼要——可以用它来开发项目并与世界各地的资助机构联系

Easier to approach large funding bodies with multi country participation - Combine our resources

更容易接近有多国参与的大型资助机构——整合我们的资源

Project outlines can then be used to gauge our performance over coming years – e.g. this time next year how far have we progressed in achieving progress in some of these project areas? Solid achievements

然后，可以使用项目概况来衡量我们在未来几年的业绩——例如，明年的这个时候，我们在这些项目领域取得进展的程度如何？扎实的业绩

# Funding

## 资金来源

- Small amount of seed money to start projects from Lincang Municipal Government  
临沧市政府启动项目的小额种子资金
- Need additional funds to make sustained progress  
需要额外资金来取得持续进展
- Need your help to compile a list of funding bodies by country/multi-country e.g. FAO, philanthropic e.g. Gates Foundation with any contacts you know. How can you help here?  
需要您的帮助，按国家/多国（如FAO）、慈善机构（如盖茨基金会）和您所知的任何联系人编制一份资助机构列表。您如何在此提供帮助？
- Can we design projects that may catch the imagination of certain funding bodies that have relevance to several countries or a region?  
我们能否设计出一些项目，吸引某些与几个国家或地区相关的资助机构的想象力？
- A multi-country approach is hard way to get funding but we need to try  
多国方式很难获得资金，但我们需要努力
- Greater chance of success if several countries approach a funding body  
如果几个国家与一个资助机构接触，成功的机会就更大
- Need some successful projects to demonstrate the IMRDC concept can work and we  
我们需要一些成功的项目来证明IMRDC的概念是可行的，我们
- Need opportunities to publicise the IMRDC and work were doing  
需要机会来宣传IMRDC和正在做的工作

# Great opportunity for publicity in 18 months time 在18个月的时间内进行宣传的绝佳机会

## 9<sup>th</sup> International Macadamia Symposium – Kenya 2021

### 第九届国际澳洲坚果年会——2021年肯尼亚

Excellent opportunity to showcase to the world the work done by the IMRDC and obtain additional funding

向世界展示IMRDC所做工作并获得额外资金的绝佳机会

#### Why is Kenya 2021 important?

为什么2021年肯尼亚第九届国际澳洲坚果年会很重要？

- Kenya is one of the three world centres for the United Nations – many International and Regional organisations and funding bodies have offices in Nairobi and will be invited to conference  
肯尼亚是联合国的三个世界中心之一——许多国际和区域组织及资助机构在内罗毕设有办事处，并将应邀参加会议
- Would like to have a session dedicated to the research outcomes from the IMRDC at conference  
希望在会议上专门讨论IMRDC的研究成果
- This is up to YOU! - If we do a good job then there is the potential to generate additional funding  
这取决于您！ - 如果我们做得好，那么就有可能产生额外的资金
- Your challenge is to work together over next 18 months to get collaborative programs going that can be presented to not only the macadamia community but to the WORLD in Kenya 2021  
您面临的挑战是在接下来的18个月中共同努力，开展协作计划，您不仅可以将其呈现给澳洲坚果社区，还可以在2021年的肯尼亚将其呈现给世界

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# Thanks for making this possible 感谢您使这一切成为可能

Lincang Municipal Government  
临沧市政府

Yunnan Macadamia Society  
云南坚果行业协会

and especially :  
特别鸣谢:

Ms Chen Yuxiu and her team  
Chen Yuxiu女士及其团队

Their reward will be to see people collaborating for the benefit of the world macadamia industry – so get collaborating

他们的回报将是看到人们为了世界澳洲坚果产业的利益而进行合作——因此，开展合作吧！

# THANKS

感谢聆听



**IMSC**

国际澳洲坚果大会委员会

International Macadamia Symposium Committee



临沧市人民政府

Lincang Municipal People's Government



云南坚果行业协会

Yunnan Macadamia Society