

# PANACEA Roadmap for FRANCE

PANACEA



CRES ; COSMOS project



Rapeseed, South France  
Photo credit: [Podcast](#)

Sweet and fiber sorghum, France.  
Photo Credit: [Jean-Luc Verdier Presentation at 1st European Sorghum Congress](#), Arvalis France



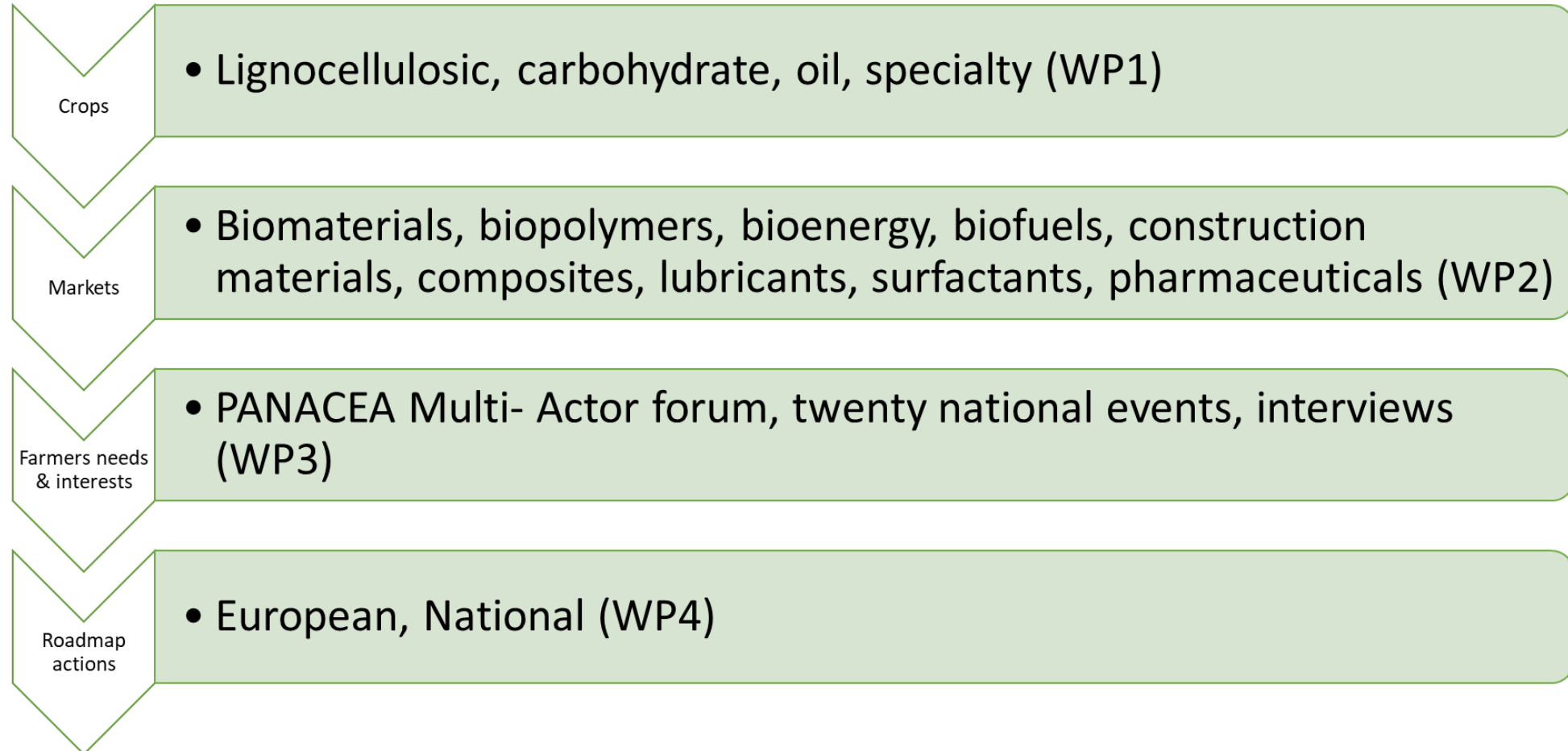
CRES



Akademija, 2018

# Approach & Links to PANACEA Work Packages

PANACEA





CRES ; COSMOS project

### Markets

Pharmaceuticals


Polymers


Lubricants,  
surfactants

Bioenergy

### Drivers



Productivity & ability to be grown in large scale using existing machinery 

Familiarity with ability to produce feedstocks for multiple end-uses 

Profitability 

Sustainability 

### Barriers











Cultivated on small farms  
Low yields compared to rapeseed, etc.

Low consumer awareness about camelina oil;  
small market and high competition with other oil crops

Low revenue due to low yields

Low experience of growing in marginal land

TRL>7			a) industrial production already available at commercial scale b) used at commercial scale for multiple end-uses c) high
TRL5-7			a) production available at demo scale b) recognized for its multiple end-uses c) medium
TRL3-5			a) research to production development b) recognized end-use but still at the research level c) low
TRL<3			a) basic research data available b) no recognized end-use c) very low




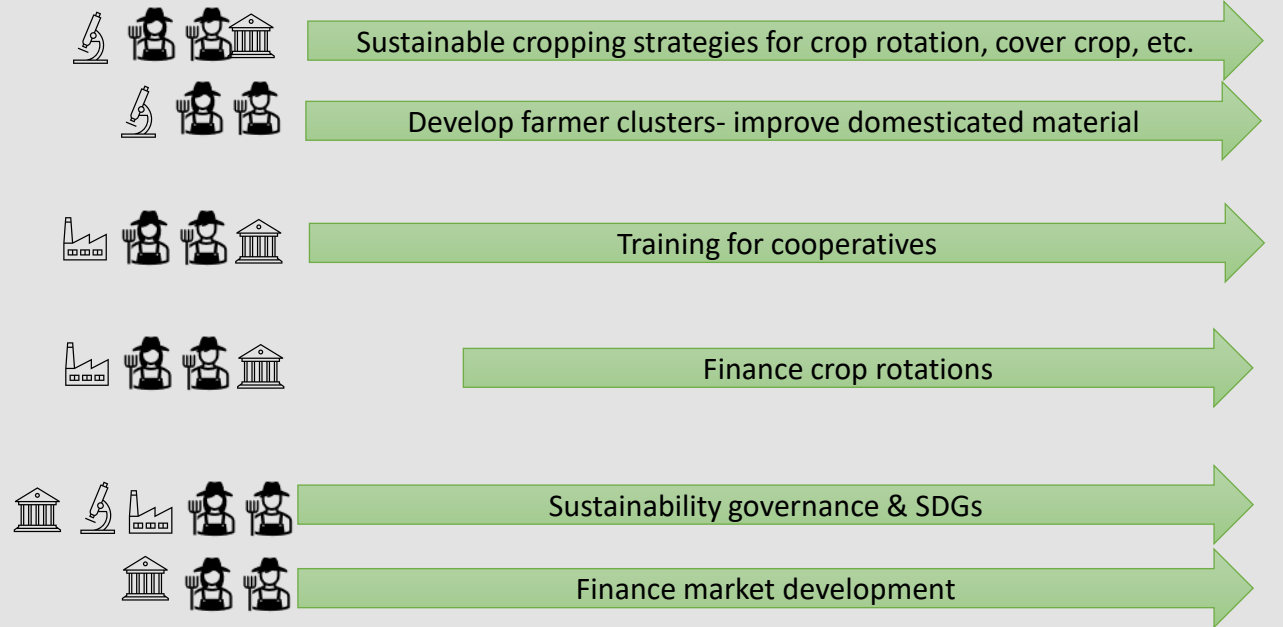
CRES ; COSMOS project

**Barriers**



- Cultivated on small or organic farms  
Low yields compared to rapeseed, mustard, etc.
- Low consumer awareness about camelina oil;  
small market and high competition with other oil crops
- Low revenue due to low yields
- Low experience of growing in marginal land

2021 2025 2030

Actors      Research Industry Government Agricultural community




CRES


### Markets

Bioenergy

### Drivers



Productivity & ability to be grown in large scale using existing machinery 

Familiarity with ability to produce feedstocks for multiple end-uses 

Profitability 

Sustainability 

### Barriers











Plants (rhizomes) are susceptible to frost  
Low yields in low quality soils  
Little domestic propagation material

Low experience of use in large scale, commercial production

Low revenue in low quality soils  
Long payback period

Avoidance of monoculture  
Low experience of growing in marginal land

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CRES

**Barriers**

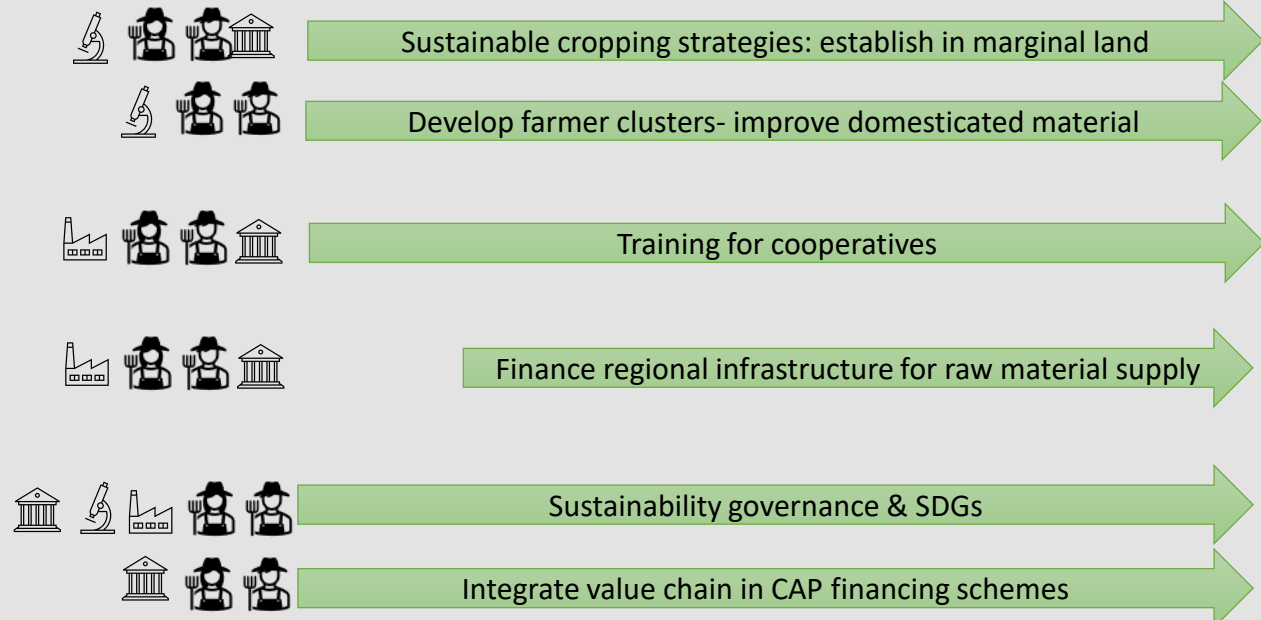







- Plants (rhizomes) susceptible to frost  
Low yields in low quality soils  
Little domestic propagation material
- Low experience of use in large scale, commercial production
- Low revenue in low quality soils  
Long payback period
- Avoidance of monoculture  
Low experience of growing in marginal land

2021

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Actors      Research  Industry  Government  Agricultural community  



Rapeseed, South France  
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### Markets

Pharmaceuticals

Polymers

Lubricants,  
surfactants

### Drivers



Productivity & ability to be grown in large scale using existing machinery 😊

Familiarity with ability to produce feedstocks for multiple end-uses 😊

Profitability 😊

Sustainability 😐

### Barriers



Cannot be grown without insecticides which are dangerous for bees  
Low availability of crop protection products

Few bio-diesel production factories

Low revenue due to low yields

Low experience of growing in marginal land

TRL>7	😊😊	<ul style="list-style-type: none"> <li>a) industrial production already available at commercial scale</li> <li>b) used at commercial scale for multiple end-uses</li> <li>c) high</li> </ul>
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Roadmap actions to overcome the barriers



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Photo credit: [Podcast](#)

Barriers 

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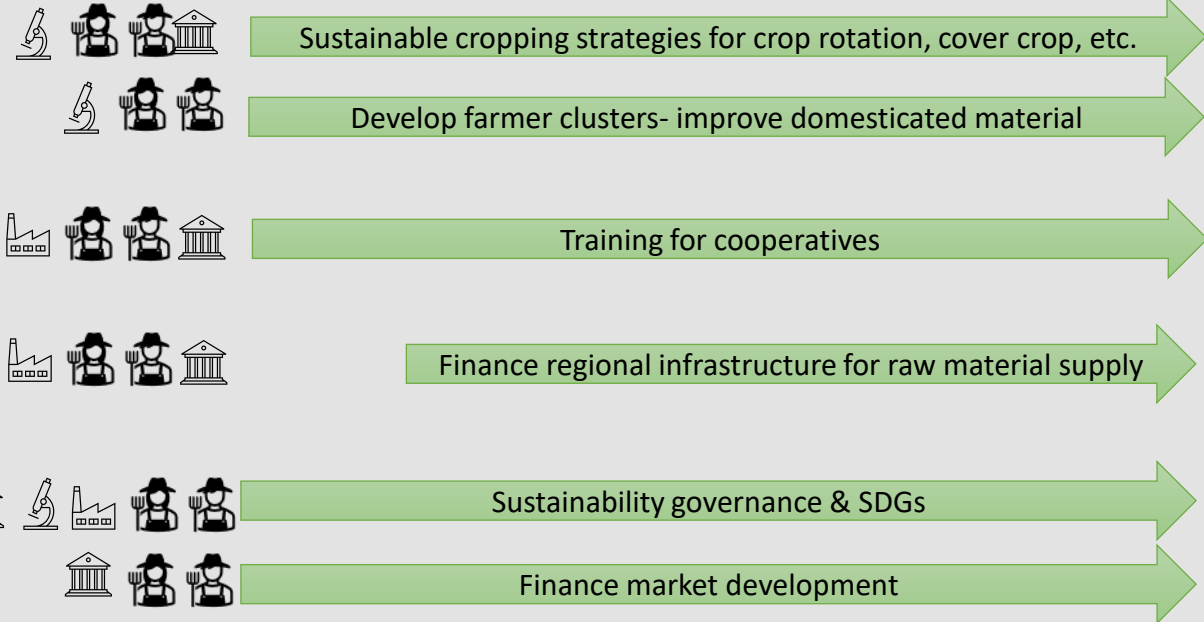
Low revenue due to low yields






Low experience of growing in marginal land

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Actors      Research  Industry  Government  Agricultural community  







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Markets

Bioenergy

Drivers 

Productivity & ability to be grown in large scale using existing machinery 

Familiarity with ability to produce feedstocks for multiple end-uses 

Profitability 

Sustainability 









Barriers 

Lack of cultivation technology know-how

Low consumer awareness  
small market and high competition with other oil crops

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# Roadmap actions to overcome the barriers



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## Barriers



Lack of cultivation technology know-how

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other oil crops

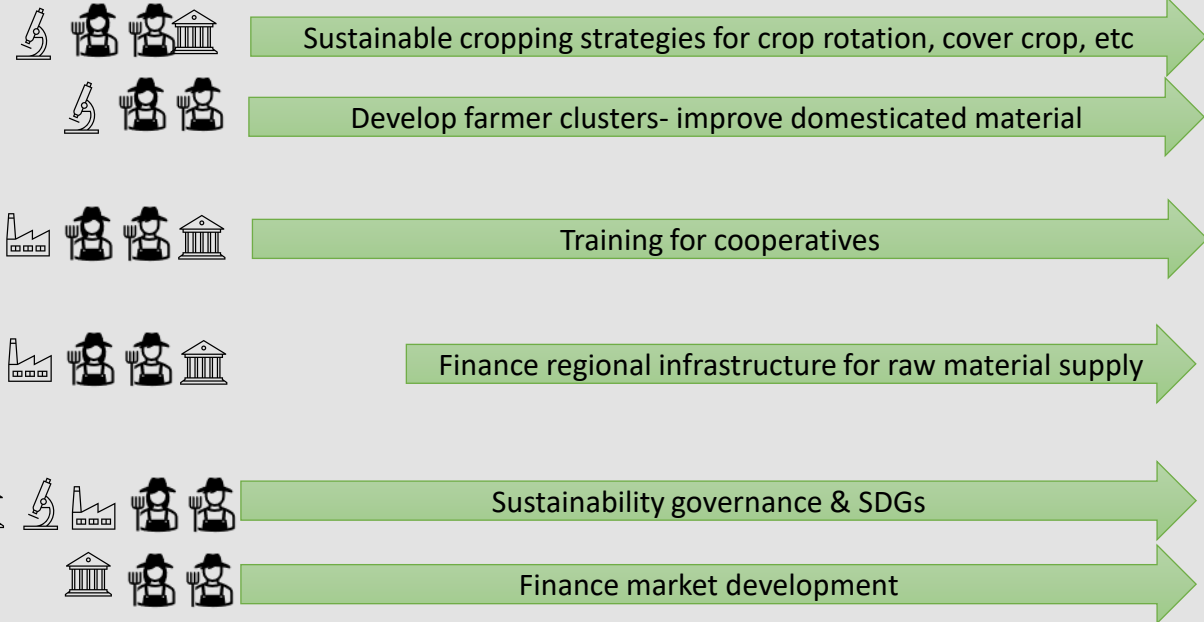
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Sweet and fiber sorghum, France.  
Photo Credit: Jean-Luc Verdier Presentation at 1st European Sorghum Congress, Arvalis France



### Markets


Pharmaceuticals


Polymers

Composites

### Drivers



Productivity & ability to be grown in large scale using existing machinery 

Familiarity with ability to produce feedstocks for multiple end-uses 

Profitability 

Sustainability 

### Barriers







Intensive weed control during early stages  
Risks of lodging during August/ September

Competition with animal feed

Low market development

Low experience of growing in marginal land

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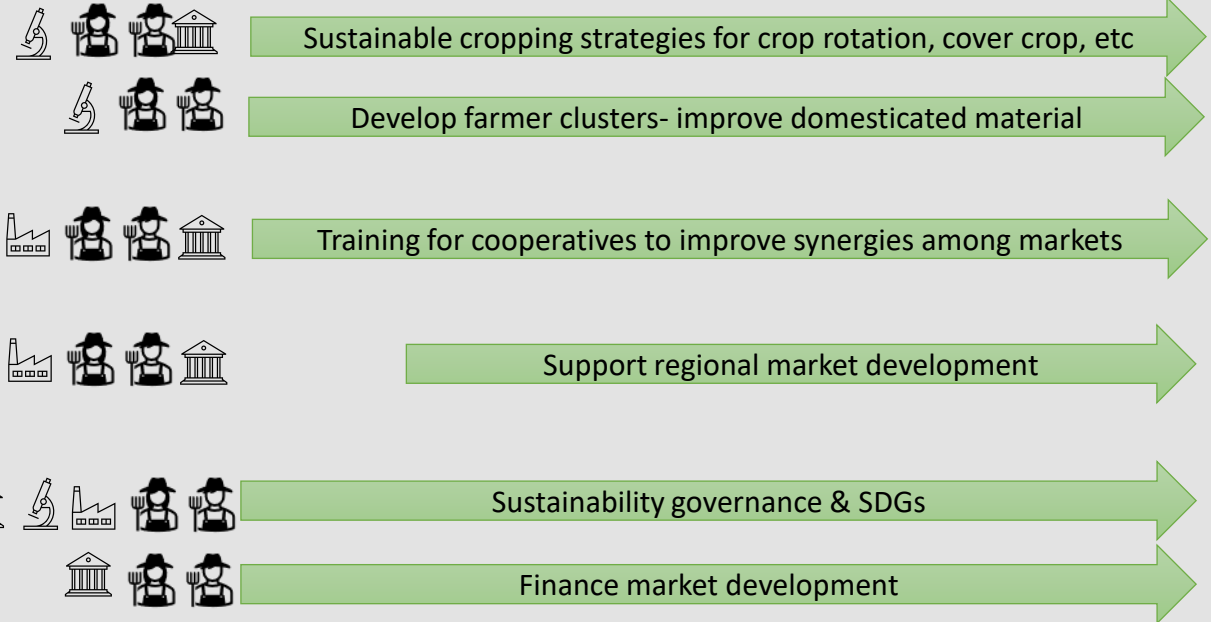
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