

From Bioenergy to Bioeconomy: a Greek stakeholders' experience

Cluster of Bioenergy and Environment
Western Macedonia, Greece

Dr. Yannis Fallas
Director
24 May 2018, Athens

Sun Sea Sand

GREECE



Sun Sea Sand #not

WESTERN MACEDONIA



... in a few photos



Pindos national park "Valia Kalda"

Lakes and rivers

Bridge over Aoos river

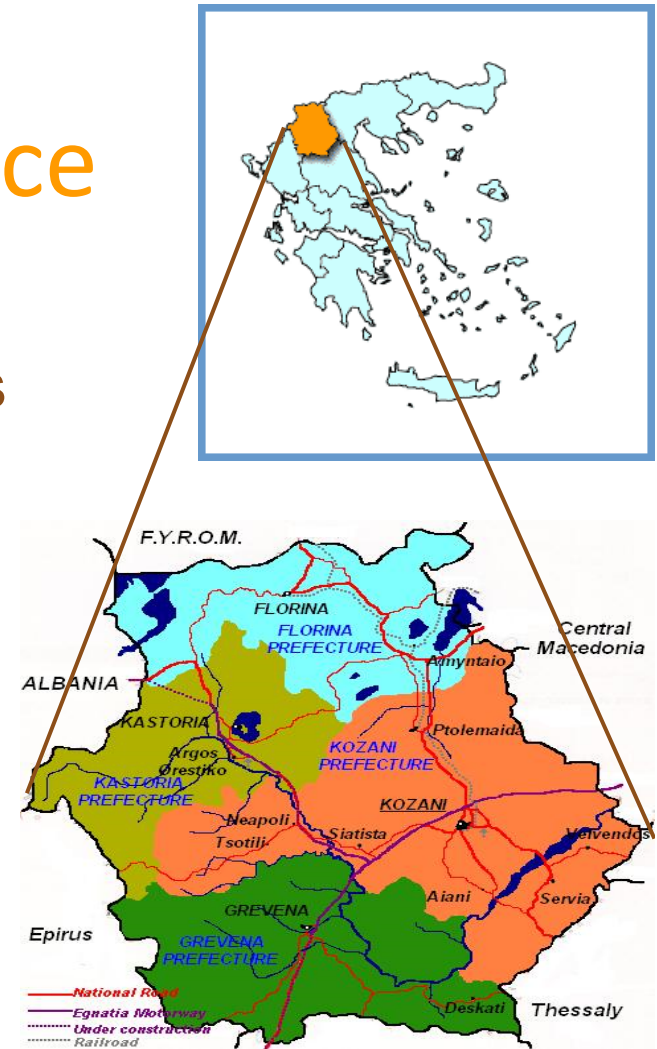


Forests

The Region in few words

Western Macedonia, Greece

- ~284.000 inh., 2,6% GR, 12 Municipalities
- PPP: 59% of EU-28 average
- Unemployment 29%, youth 70,9% (2015)
- Strong energy sector (lignite based):
≈50% of GR total el
- Agriculture and animal breeding
- Forest coverage
- Relatively heavy & long winter period



Heating importance

Major towns with DH

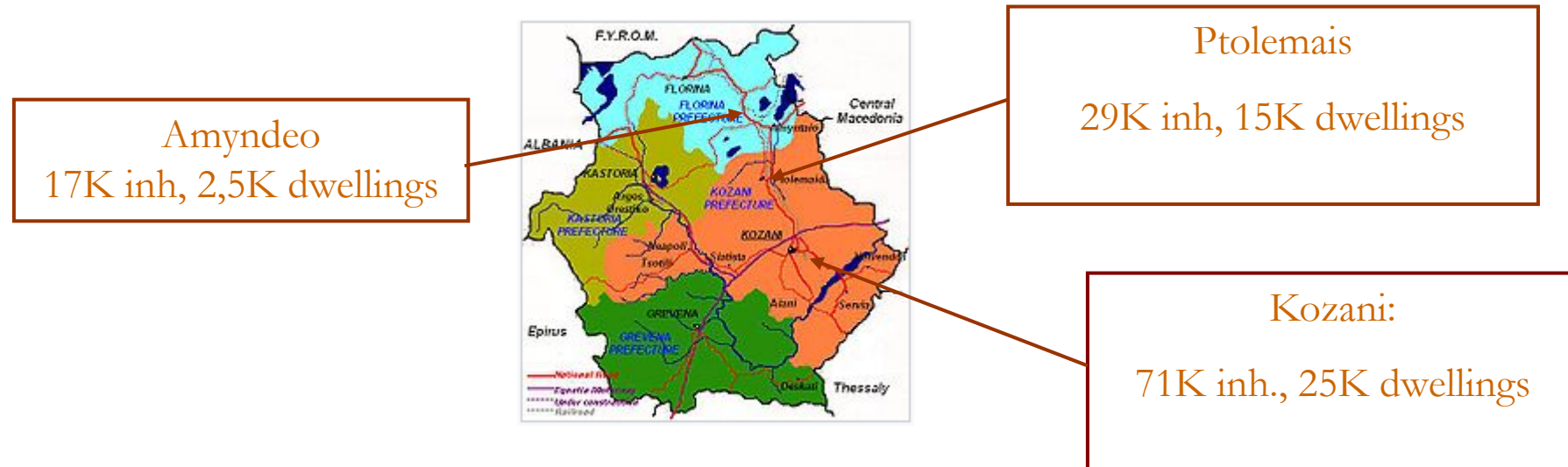
3 / 5 DH in the country

3 / 4 municipal DH



Municipalities

Fossil DH towns vs bioenergy



Currently from lignite excess heat but..

Amyndeio needs to substitute the thermal power of the Amyndeio Power Unit, shutting down soon!

Kozani and Ptolemais examine biomass boilers to improve the energy mix and cover expansions

Other towns in the Region

Kastoria: 13.400 inhabitants, fur sector, agriculture, tourism

Grevena: 13.100 inhabitants, forestry, wood industry, agro

Florina: 19.800 inhabitants, forestry, winery, animal breeding

Siatista: 2.000 inhabitants, fur-leather sector, agriculture

Servia+Velvendo: 3.000+3.360 inh., winery, forestry, tourism

...

Cooperation Background

- RIS (1996-1999) & RIS+ (2000-2002)
- Knowledge clusters (03-06)
- Innovation Pole for Energy Sector (06-08)
- BioClus, BioEnArea, Proforbiomed, Empower, SMART+, DEBCO, Foropa, Model forest, ... (09-16)

CLUBE

Western Macedonia, Greece



Bioenergy and Environment Cluster - CLUBE

Formally established 2014

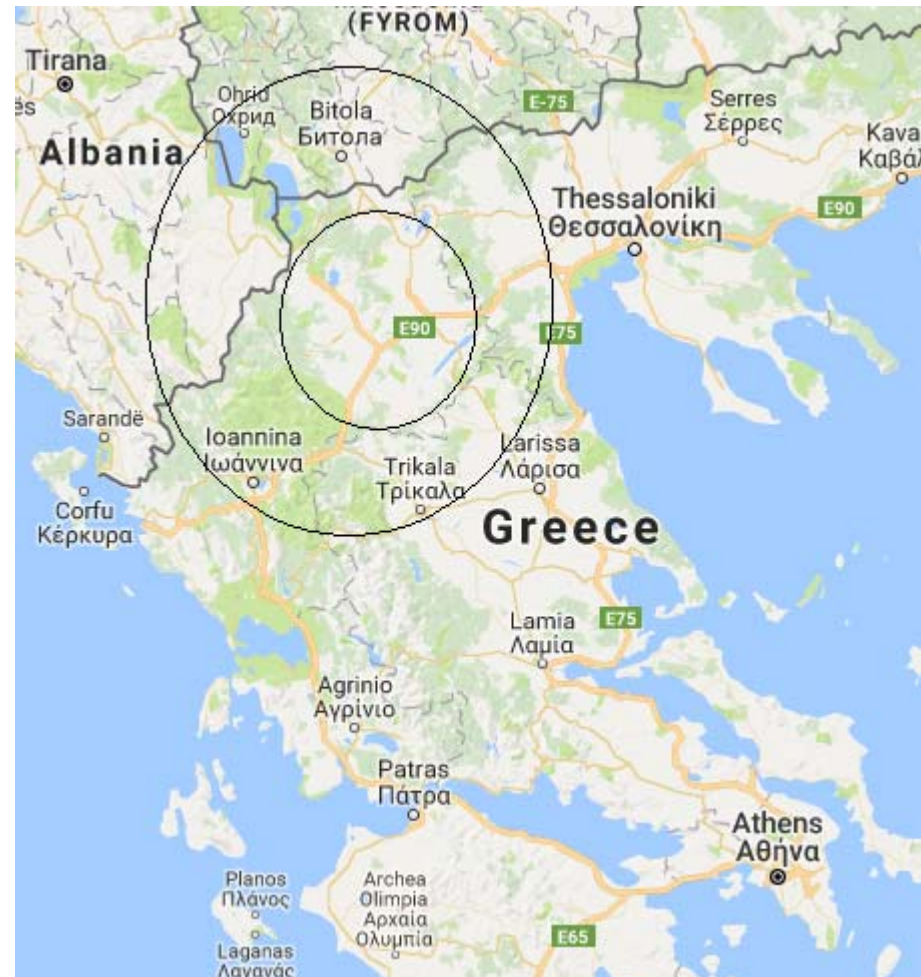
Not-for-profit company

Bottom-up approach

<https://clube.gr>

Area of intervention

- Western Macedonia
- Neighboring regions
- Cross border
- Greece
- Europe, Balcan, Adriatic



CLUBE

Objective

Development of common
business and R&D

In Bioenergy and
Environment



Why bioenergy and environment...

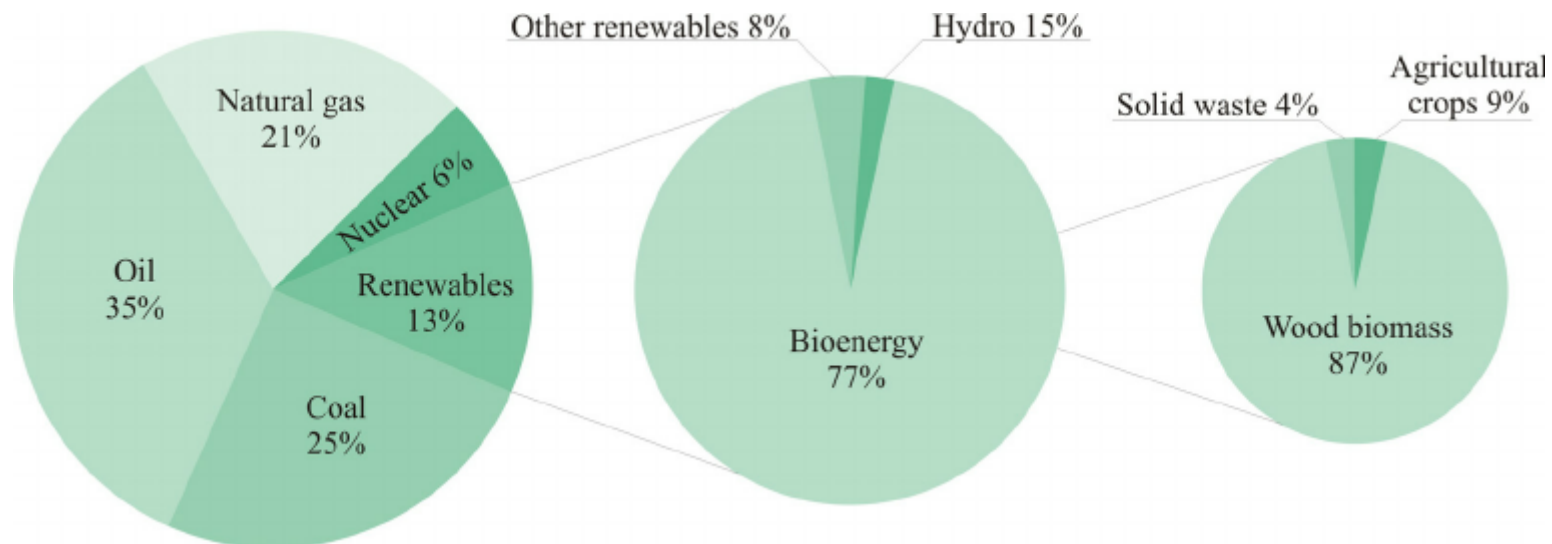
Share of energy from renewable sources in the EU Member States

(in % of gross final energy consumption)



Why bioenergy and environment...

Development perspectives...



Share of bioenergy in the world primary energy mix, IEA 2016

Greece $\approx 0,5\%$..

Why bioenergy and environment...

Med wild fires...



Why bioenergy and environment...

Agro-field fires : soil degradation + air pollution...



Why bioenergy and environment...

Jyväskylä 1950 - 2010



Areas of activity

Energetic exploitation of **biomass** for District Heating and industrial, commercial and domestic use

Co-firing of biomass with lignite

Optimization of heating systems

Biomass development (energy **plantations**, certification schemes, etc)

Energy **efficiency** in business and commercial use, as well as households

Cooperation **models** (ESCO's, energy cooperatives, ...)

33 Triple Helix members

Public sector

- Regional Authority of Western Macedonia
- Regional Development Fund of W.M.
- Regional Association of Municipalities of W.M.

Regional Development Agency

- ANKO S.A.

Academia

- University of W.M./Dpt of Mechanical Engineers
- Chemical Processes and Energy Resources Institute / Centre for research and Technology Hellas (CPERI / CERTH)
- Technical University of Western Macedonia
- Centre for Technological research of W.M.
- Centre for Environment of W.M.
- Technological University of Thessaly/Dpt of Wood and Furniture

Business sector (1)

Wood companies

- Alfa Wood S.A.
- Giotas S.A.
- Ziogas Ltd
- Chliapas S.A.

Cooperatives:

- Forest Cooperative “Pentalofos”
- Agricultural Cooperative “Dimitra”
- Forest cooperative “Smixi”
- Agricultural – Cattle breeding cooperative “Aigopro”
- Fur producing animals breeder’s Association

Business sector(2)

Waste Management company:

- DIADYMA S.A.

District Heating companies:

- DETEPA S.A.
- DEYAK S.A.
- DETIP S.A.

Biomass production and logistics:

- AZ Bioenergeia
- BIOZONE

Biogas producer :

- Matesion Ltd

Business sector(3)

Boiler manufacturers:

- Combi Thermodynamiki S.A.
- Camino Design S.A.
- Afentoulides Ltd

Biomass / bioenergy consulting companies:

- Greek Forests Ltd
- Ligeas Energy
- Energon
- Cosc S.A.

MEMBERS MAPPING



Regional asset

- Improvement of regional economy
- Development of entrepreneurship and employment, namely in less populated agricultural / forest areas
- CO2 emissions reduction
- Potential for export (pellets)
- Increase of green energy share
- Better forest management and minimization of wild fires

Fits with Smart Specialization Strategy

2014 2020

SME support

R&D&I

digital agenda

low carbon economy

Projects so far...

- SecureChain (H2020 LCE)
- Cluster support programme (GSEVEE - Gr)
- *GABE (Interreg Greece Albania)*
- *M3P (Life 2015 Environment)*
- *FORCIP+ (DG ECHO)*
- aGROWchain (Interreg GR-FYROM)
- BENEFIT (Interreg GR-FYROM)
- STARDUST !! (Smart Cities)
- RUBIZMO (Rural development)
- ...

CLUBE

What we see...



Bioenergy

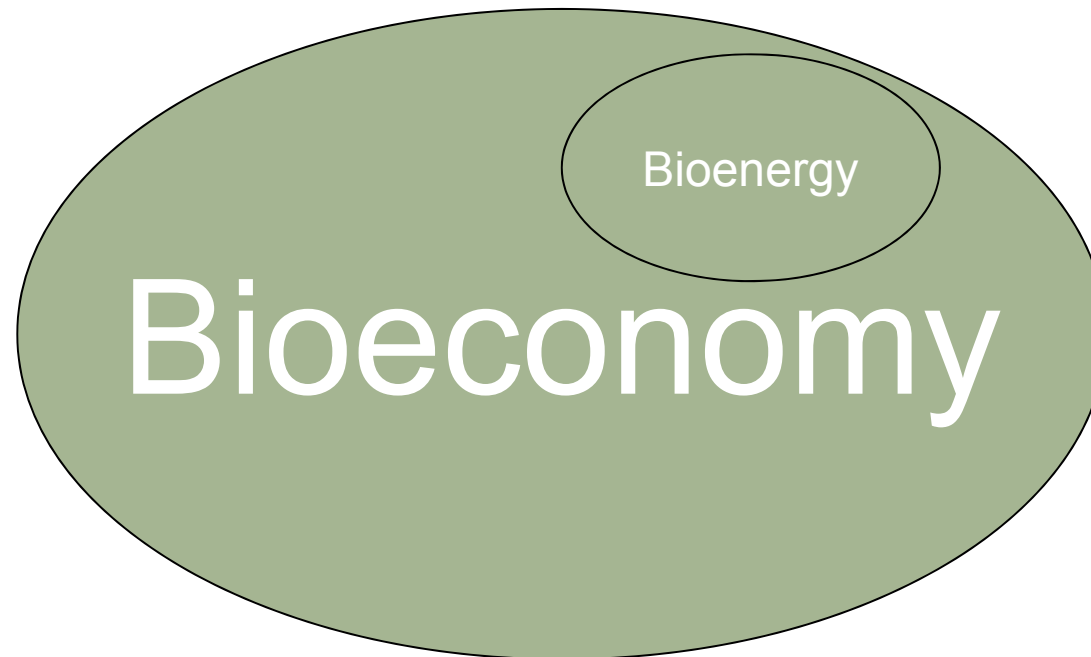
CLUBE

What it is...



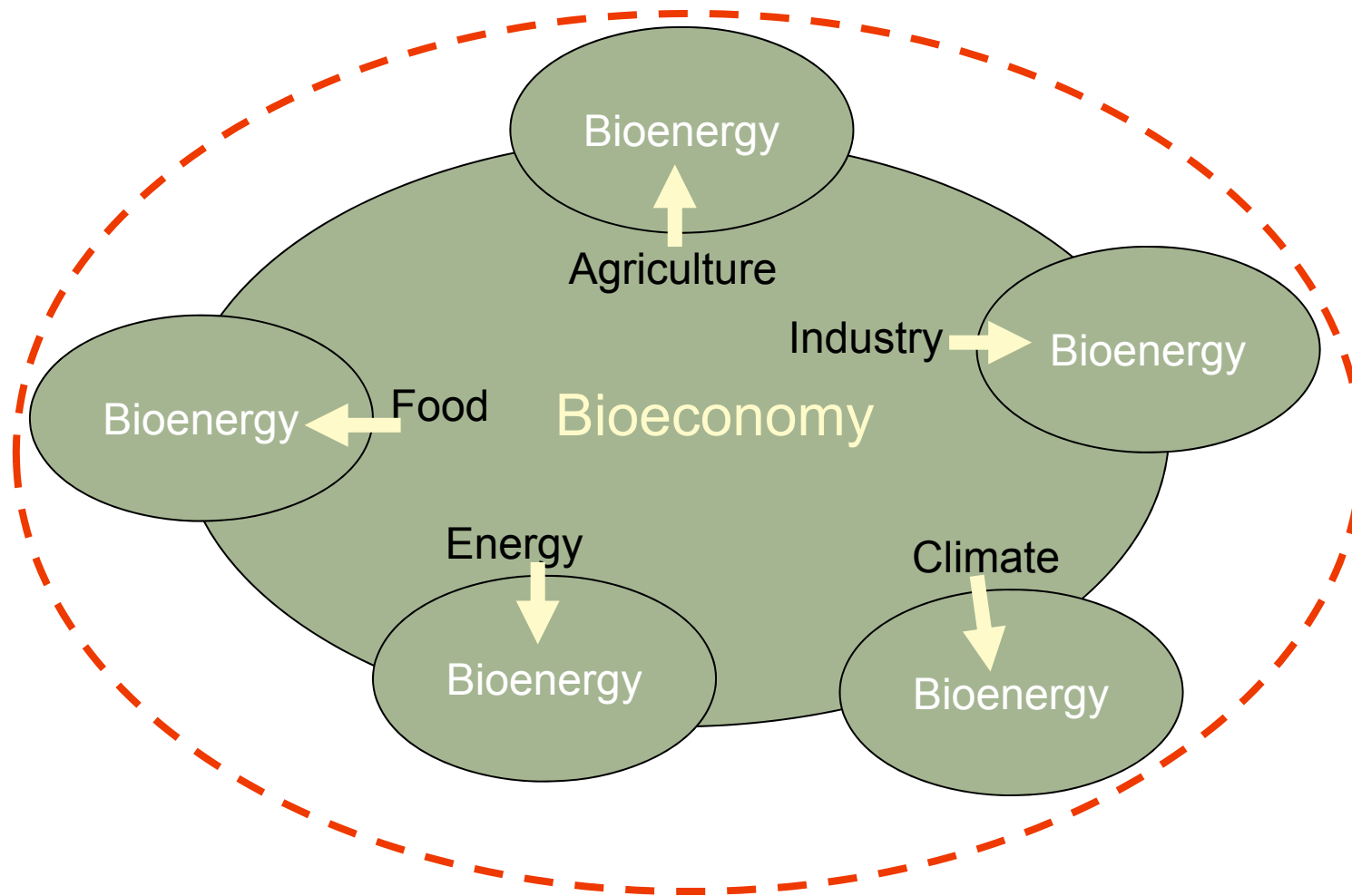
Bioenergy

Big picture...

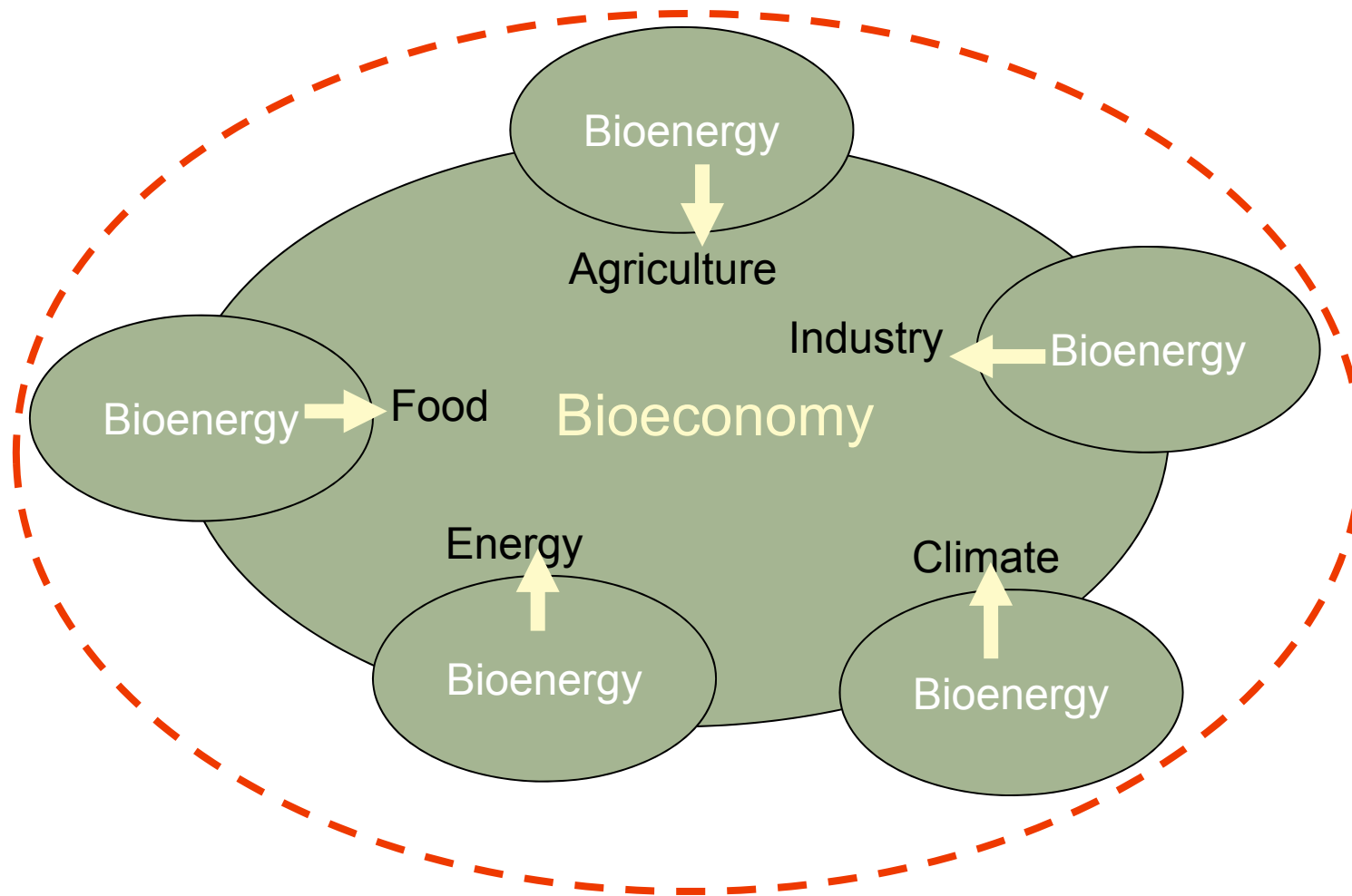


Bioeconomy

In detail



Reverse engineering needed



Understanding the starting points...



CLUBE

Western Macedonia, Greece

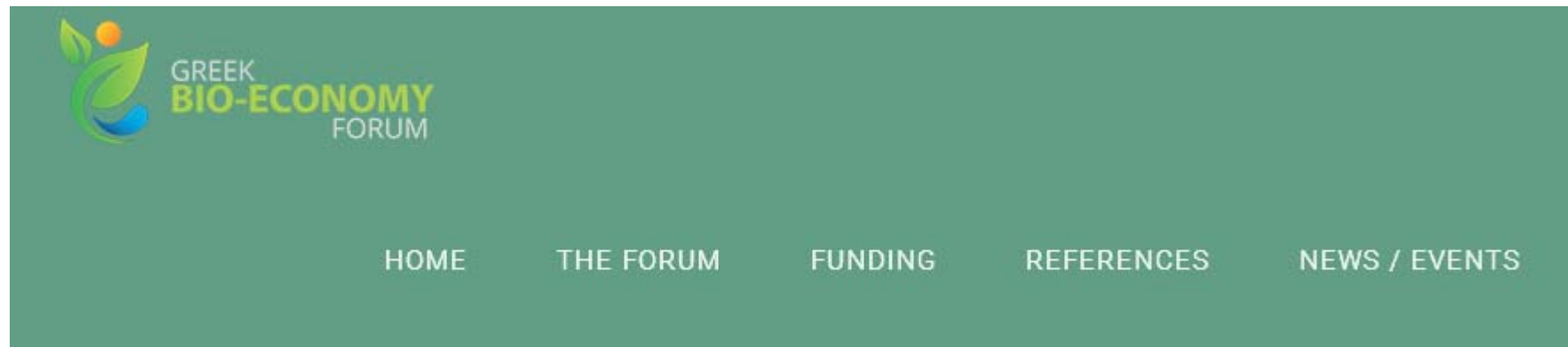
Cluster of BioEconomy



CLUBE

Change is difficult...

Bioeconomy at national level



<http://bioeconomyforum.gr/>

Objectives

Raise awareness about Bioeconomy

Promote BE advantages

Develop BE opportunities

Transfer know how and GP's

Influence national policy level

Support the development of a

National Action Plan for BE



Thank you

Dr. Ioannis G. Fallas

PhD on Spatial and Regional Development

Member of the European Bioeconomy Panel (DG RTD)

Director

Cluster of Bioenergy and Environment
of Western Macedonia

Tel. +30 24610 56632

Mob +306946465947

fallasyannis@gmail.com, info@clube.gr

www.clube.gr