



# Nährstoffrückgewinnung aus biologischen Abfallströmen zur Düngemittelproduktion

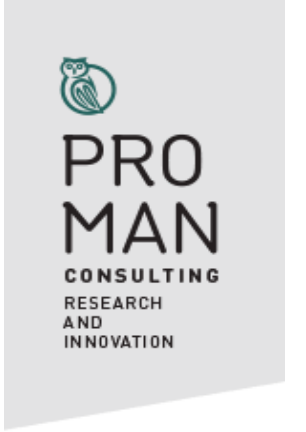
Ralf Hermann, Proman Management GmbH

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Vorstellung Proman Management GmbH

# Vorstellung Proman Management GmbH

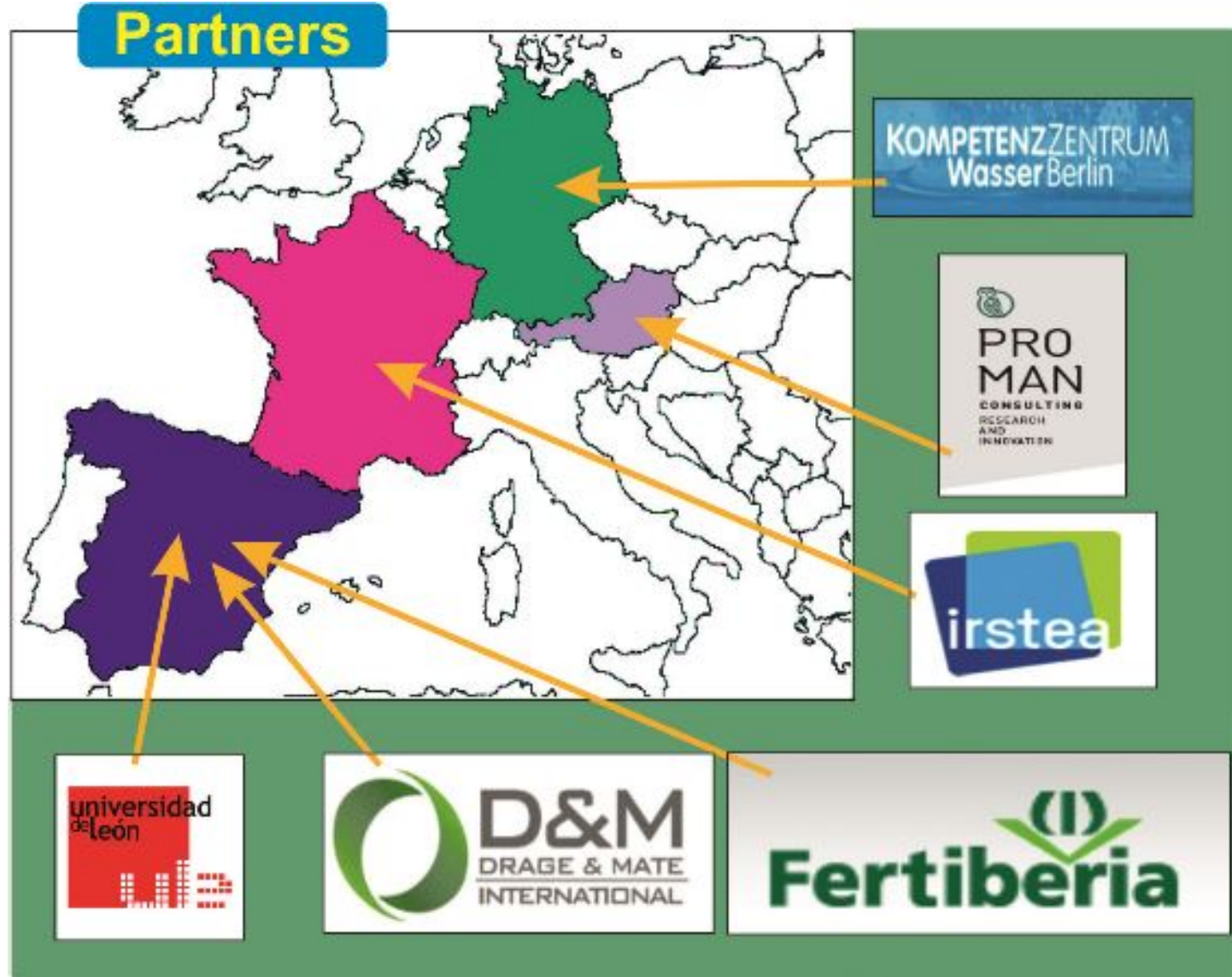


- Gegründet 2001
- Entwicklung des ersten thermochemischen Verfahrens zur Phosphor-Rückgewinnung aus Klärschlammaschen - AshDec
- Beratung von Unternehmen, Regierungen und NGOs
- Entwicklung von Technologien von TRL 1 bis TRL 9 > Markteintritt
- Schwerpunkte: Nährstoffkreisläufe, energetische und stoffliche Nutzung biologischer Abfälle, P-Recycling > Circular Economy



*Newfert - Das Konsortium*

# Newfert - Das Konsortium



# Newfert - Das Projekt

# Newfert - Das Projekt



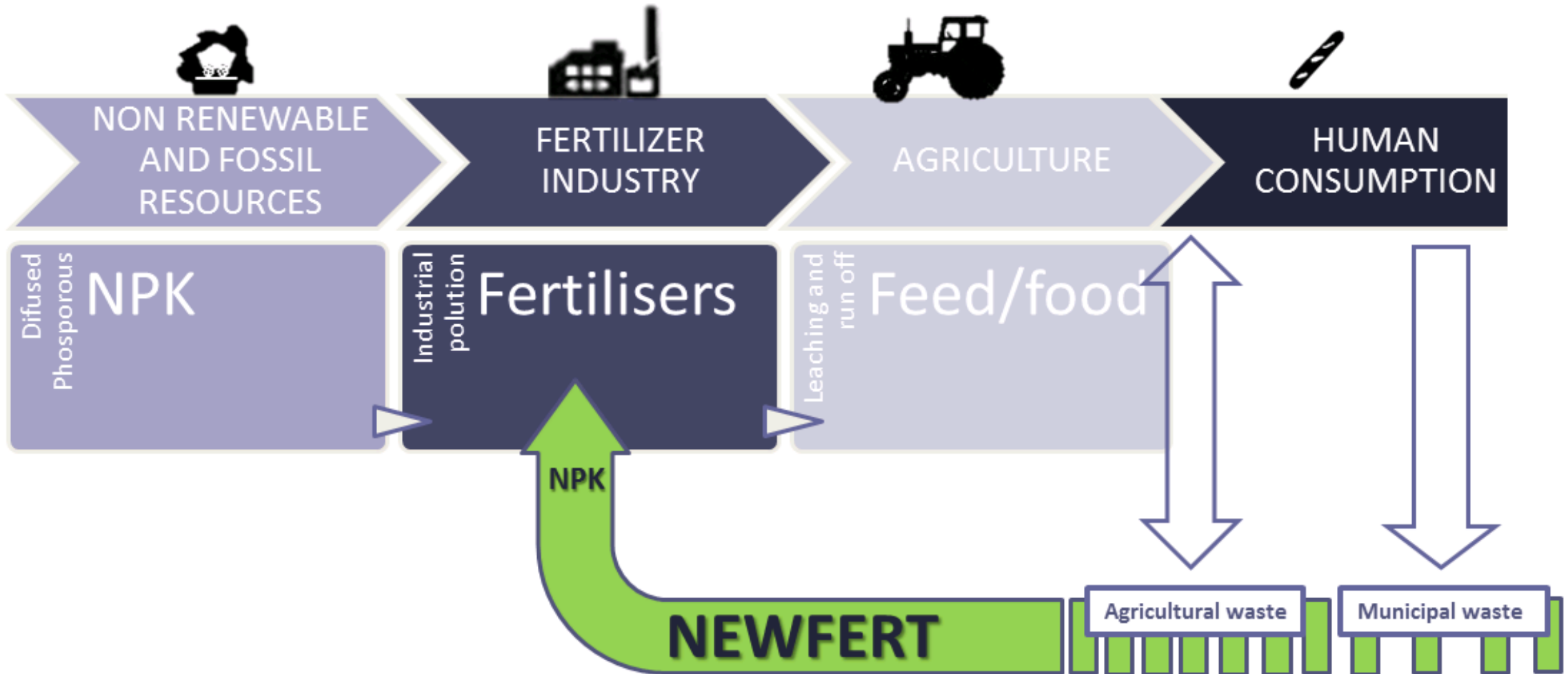
- H2020-BBI-PPP-2014-1, Topic: BBI VC4.R10: "Nutrient recovery from biobased waste streams and residues"
- Start: 1.7.2015                      Ende: 31.12.2018
- Dauer: 42 Monate
- 6 Partner aus 4 EU-Mitgliedsstaaten



## Ziele:

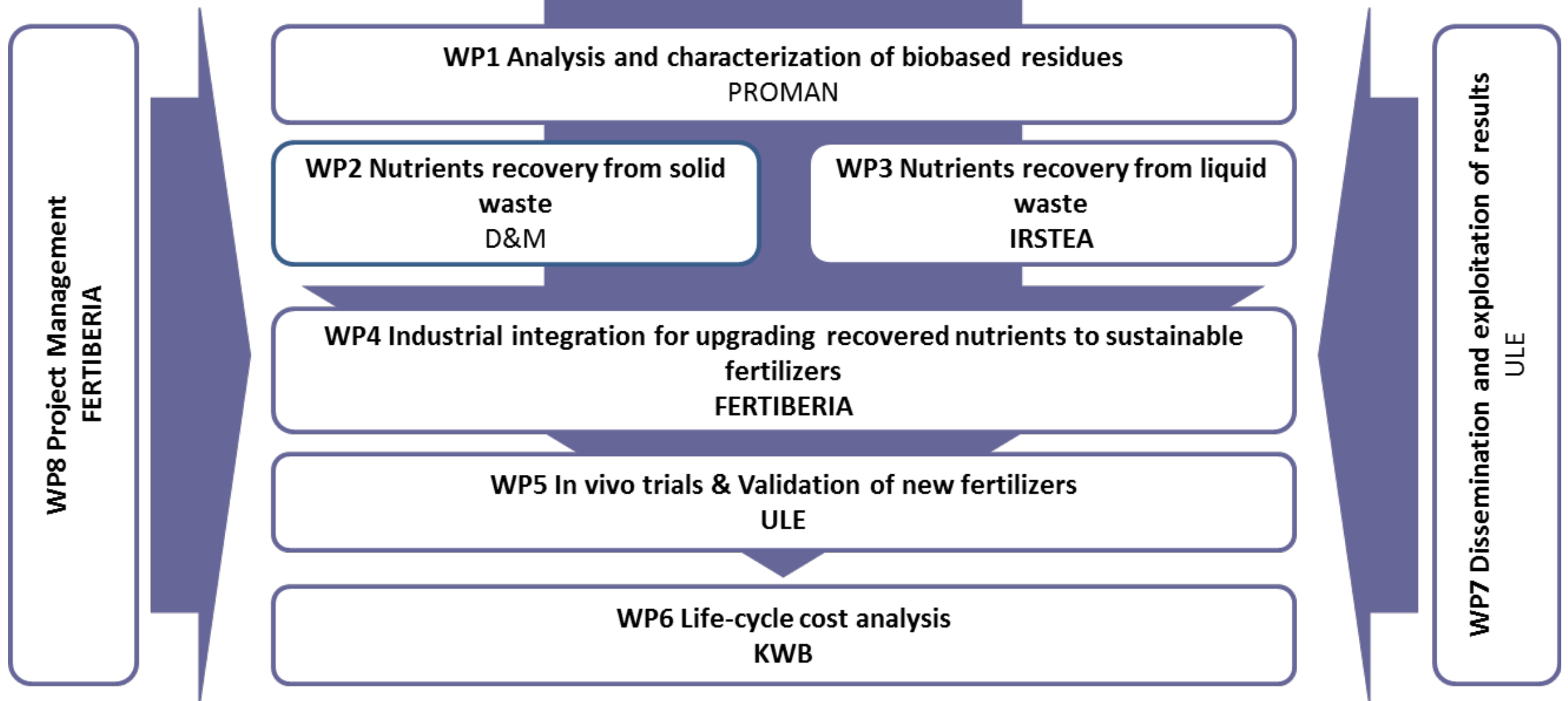
- Neue Verfahren zur Nährstoffrückgewinnung aus biologischen Abfallströmen
- Ungenutzte Nährstoffströme nutzbar machen
- Abhängigkeit Europas von P-Importen reduzieren
- Umwelteinwirkung von Düngemittelproduktion reduzieren

# Newfert - Das Projekt



Recycling towards high quality products

# Newfert - Das Projekt



Newfert - Stand nach dem 1. Jahr

# Newfert - Stand nach dem 1. Jahr



WORKPACKAGE DESCRIPTIONS	DURATION / CRITICAL PATH																																									
	YEAR 1												YEAR 2												YEAR 3												YEAR 4					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
<b>WP1 Analysis and characterization of biobased residues</b>																																										
Task 1.1 Identifying, collecting and analysing bio-based waste materials (update)																																										
Task 1.2 Defining acceptability parameters for the fertilizer industry																																										
Task 1.3 Identification of potential pre-treatments (Capacities and limitations)																																										
Task 1.4 Assessment of materials, pre-treatment methods and recovery technologies with regard to their industrial nutrient recovery potential																																										
<b>WP2 Nutrients recovery from solid waste</b>																																										
Task 2.1 Design of a new process to recover nutrients from ashes: sewage sludge, manure, household waste																																										
Task 2.2 Development of chemical nutrients extraction processes																																										
Task 2.3 Scale-up of the integrated system and operation under realistic conditions																																										
Task 2.4 Quality assessment of the obtained products																																										
<b>WP3 Nutrients recovery from liquid waste</b>																																										
Task 3.1 Design and development of a new process to recover nutrients from animal waste through anaerobic digestion																																										
Task 3.2 Pilot integration of anaerobic digestion and nutrients recovery																																										
Task 3.3 Design and development of a new process to recover nutrients from liquid bio-waste streams through BES																																										
Task 3.4 Scale-up of BES and operation under realistic conditions																																										
Task 3.5 Quality assessment of the obtained products																																										
<b>WP4 Industrial integration for upgrading recovered nutrients to sustainable fertilizers</b>																																										
Task 4.1 Compatibility tests of recycled nutrients with usual NPK raw materials																																										
Task 4.2 Simulation, improvement and optimization of NPK granulation process at laboratory scale																																										
Task 4.3 Simulation, improvement and optimisation of complete NPK process at pilot plant scale																																										
Task 4.4 Development of the industrial plant integration technology																																										
Task 4.5 Design and development of a new family of recycled fertilizers																																										
<b>WP5 In vivo trials &amp; Validation of new fertilizers</b>																																										
Task 5.1 Phytotoxic effects test on newly obtained fertilizers																																										
Task 5.2 Bioavailability of nutrients																																										
Task 5.3 Pot trials: New fertilizers performance assessment																																										
Task 5.4 Quality of the soil as a consequence of the application of the new fertilizers																																										
<b>WP6 Life-cycle cost analysis</b>																																										
Task 6.1 Life Cycle Assessment - LCA																																										
Task 6.2 Regulatory framework assessment																																										
Task 6.3 Cost-quality relationships																																										
Task 6.4 Market potential																																										
<b>WP7 Dissemination and exploitation of results</b>																																										
Task 7.1 Workshops																																										
Task 7.2 IPR management																																										
Task 7.3 Exploitation risk management																																										
Task 7.4 Production of Dissemination and Communication Plan																																										
Task 7.5 Scientific publications																																										
Task 7.6 Production of communication material package																																										
Task 7.7 Execution of communication activities																																										
Task 7.8 Internal knowledge management																																										
<b>WP8 Project Management</b>																																										
Task 8.1 Provide administrative assistance to project partners																																										
Task 8.2 Steering Committee meetings																																										
Task 8.3 Technical Committee Meetings																																										
Task 8.4 Quality Management																																										
Task 8.5 Technical and financial progress and final reports																																										

## Newfert - Stand nach dem 1. Jahr

- ✓ WP1: Analyse und Charakteristik biologischer Abfälle
- ✓ T1.1: Biologische Abfälle identifizieren, Proben sammeln und analysieren
- ✓ T1.2: Anforderungen der Düngemittelindustrie definieren
- ✓ T1.3: Mögliche Vorbehandlungsschritte definieren
- ✓ T1.4: Abfälle und Vorbehandlungsschritte auf deren industrielle Eignung prüfen
- ✓ T2.1: Überblick und Bewertung bestehender Prozesse zur Nährstoffrückgewinnung aus biologischen Abfällen
- ✓ T7.4: „Dissemination und Communication“ -Plan erstellen

# Danke für Ihre Aufmerksamkeit!

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[www.newfert.org](http://www.newfert.org)