

U P 
S T R A W



UP STRAW

positioning straw as the premium sustainable building material

Introduction

Sustainable and healthy living and, as part of that, sustainable building is a basic need for us and our children's future.

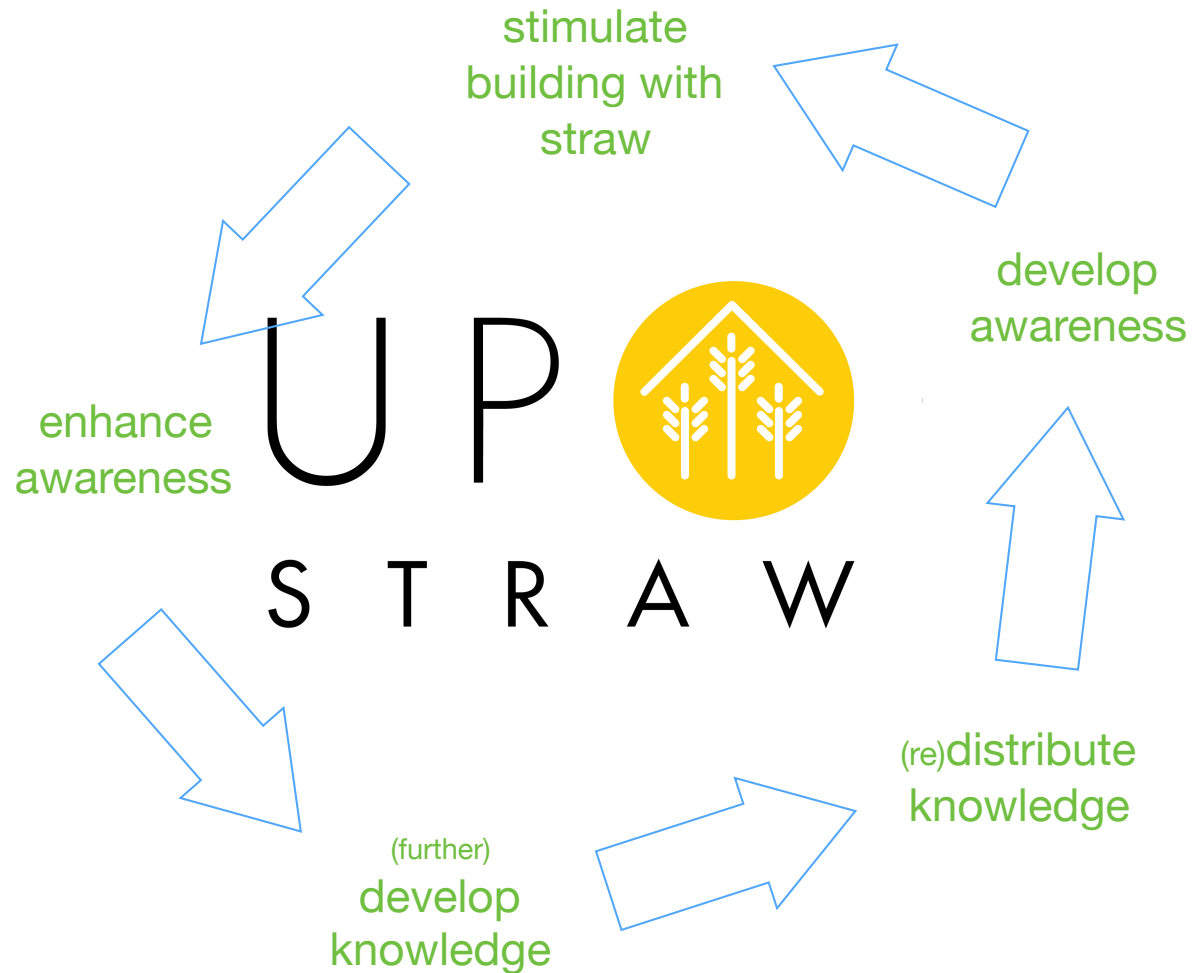
Building with straw is, in combination with and among other natural materials, a great support in realising sustainable building.

This document is about the project Up Straw: we position straw as premium natural building material in the North West European region.

what are we up to? Up Straw as a PROCESS

We intent to develop a continuous growth of the use of straw (in combination with other natural building materials as clay & wood).

The result of UP STRAW is not restricted to the project period but should be continued afterwards (through ESBA).



what are we up to? CONSTRUCTING a STRAW FUTURE

Unknown makes unloved

However straw is used for over a century in building, the awareness of it's excellent usability for the construction of houses/buildings is not widespread.

Image

An aspect of this 'unpopularity' is the image of straw and the anticipated 'non-substantial nature' (it's not brick/concrete)/the prejudices of the disadvantages of straw ('it burns', pest infection risk etc.). Important aspect of the image is the amateur/do-it-yourself practice till (almost) now.

Straw and clay for inner climate optimisation

A comfortable and healthy inner climate came recently to attention. Especially related to housing and schools.

Government attention for environmental optimisation with natural materials

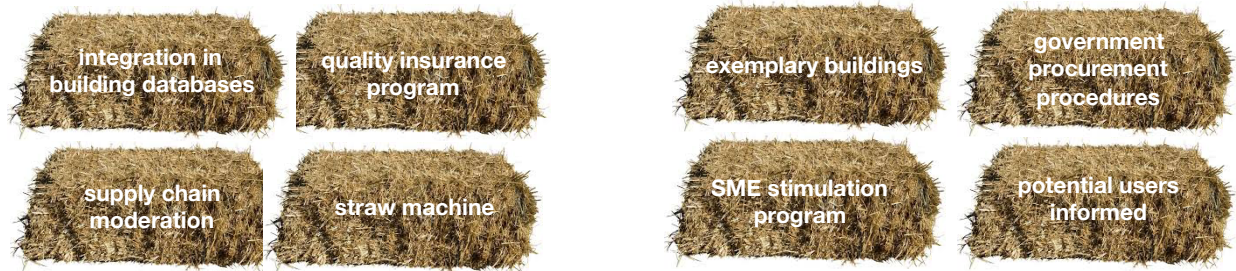
Reducing CO2 is a (EU) government spearhead. But (local)governments can also be addressed in their building owner/maintenance/renovation role.

Constructing straw future

The further development and dissemination of knowledge, professionalisation and delivering the 'straw message' creates the integrated and combined effort for a 'STRAW FUTURE'.

(Demand for) application is fundamental for acceptance. That understanding is basic in the creation of the Up Straw communication strategy.

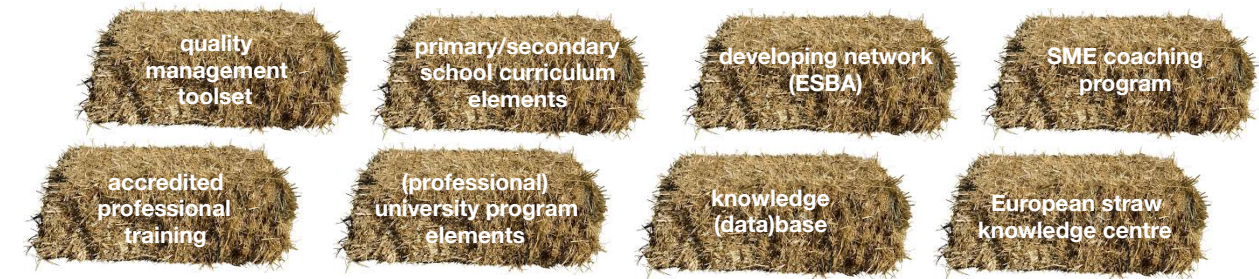
straw proves an excellent alternative



continue & enhance awareness

stimulate building with straw

straw (prom)is(es) an excellent alternative



develop awareness

(re) distribute knowledge



(further) develop knowledge

research

Straw is used for building since the beginning of the previous century, mostly in private housing.

Until 20 years ago the knowledge available was practical/ related to craftsmanship.

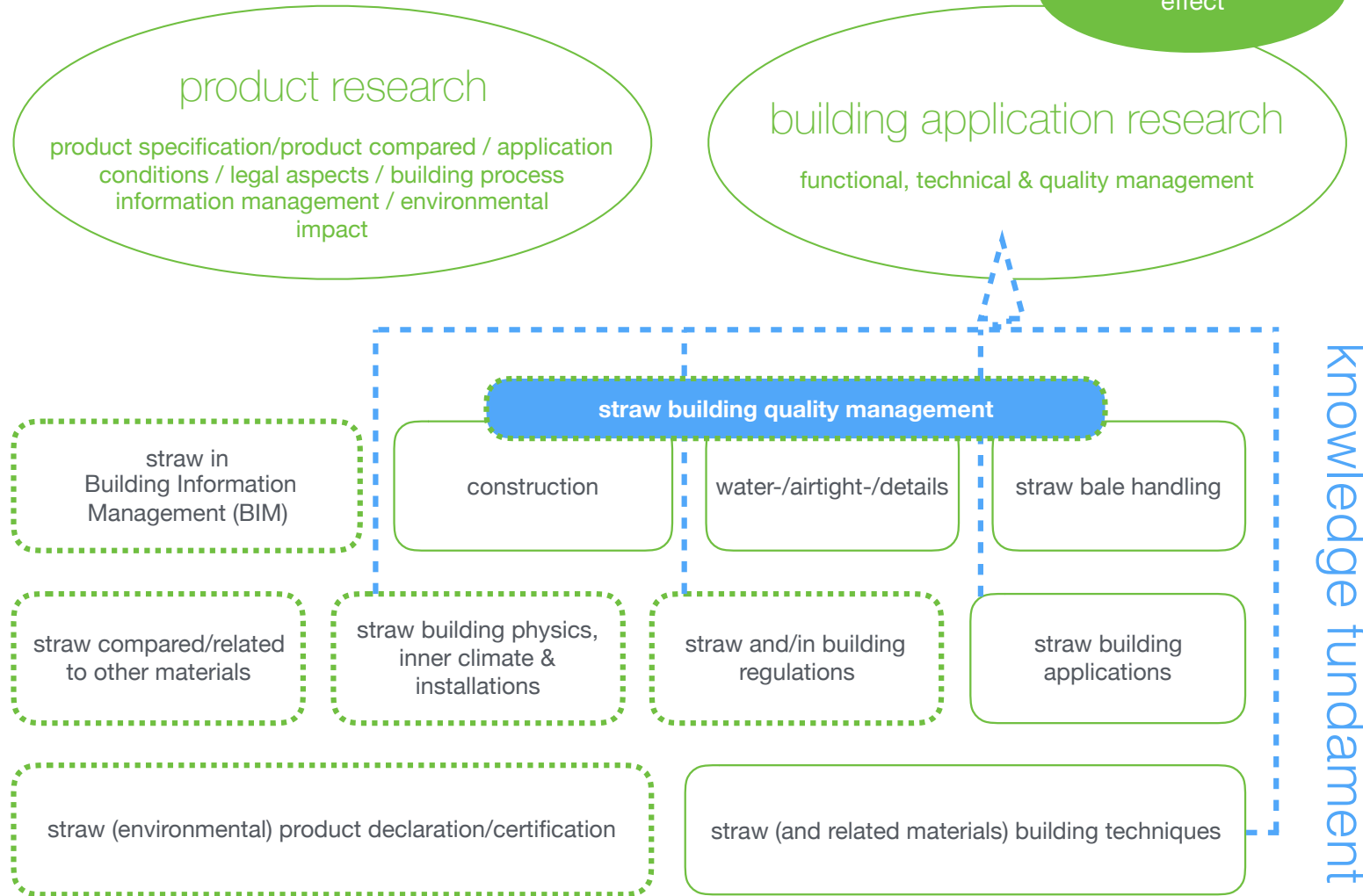
Since 2002 national straw bale organisations were founded (OS: ASBN 1999, GE: Fasba-2002, NL: Strobouw Nederland 2003, FR: RFCP 2006) and more structured development of knowledge in the various European countries started.

Yet there is a lot to coordinate/further develop:

- knowledge aggregation/enrichment and translation;
- research related to building physics and combination with installations;
- the use of straw for building apartment complexes, schools, offices and utility buildings;
- the use of straw for post-insulation of existing buildings;
- a quality assurance reference and practice

The further development of knowledge is done by:

- research projects (click dotted subjects);
- practical building experiments; (click building application research);
- knowledge aggregation and -translation (click lined subjects).



demonstration effect

knowledge and distribute

collect/enrich existing

Formalise the position of straw as a building product

Straw bale building is not new. The maison Feuillette, the oldest (known) building in straw (Montargis) shows that.

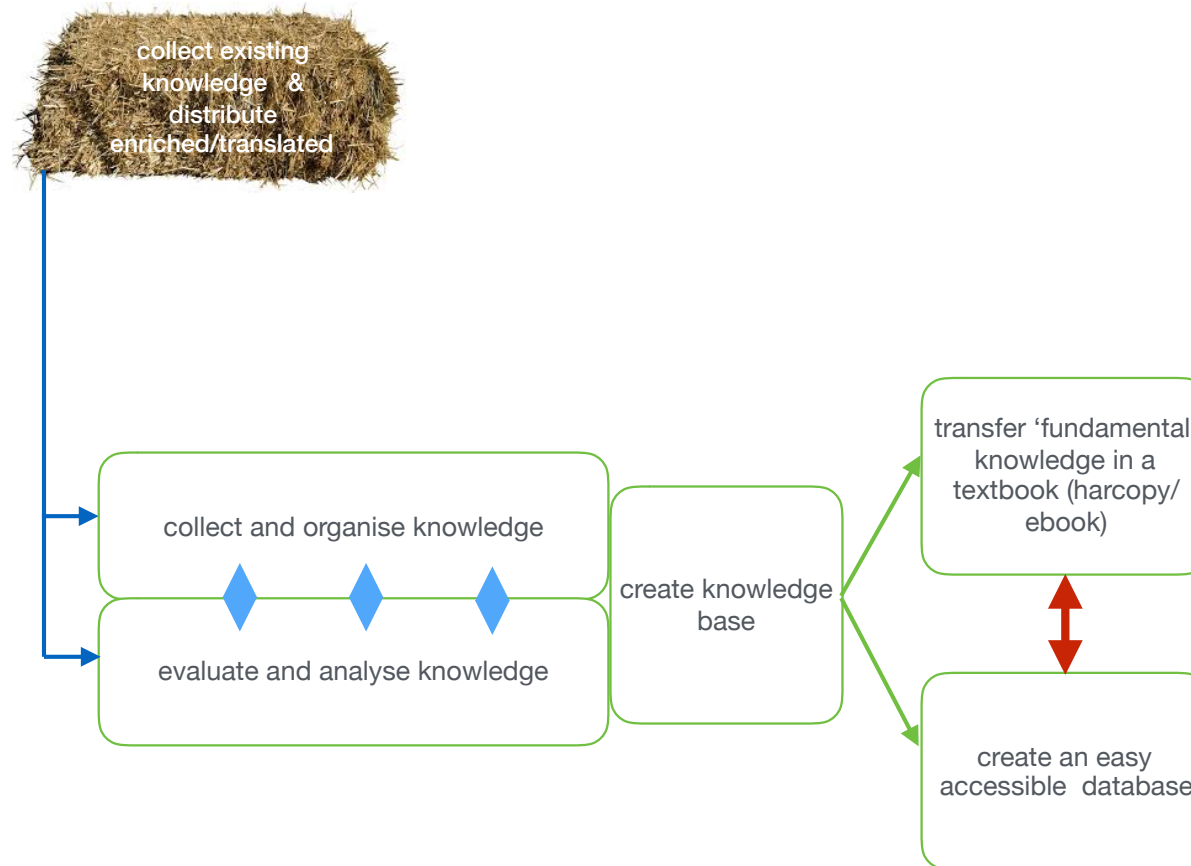
In the recent 35 years the application of straw has spread. In many countries straw is applied in building. Books on straw building witness this.

The knowledge developed and (not)documented has been enhanced by a variety of research activities.

All this information has to be made available to potential users in a consumer friendly way.

That means gathering, categorising/organising, evaluating and editing. Thus preparing accessible information in two basic/essential products:

- a textbook, to be used as base for (professional) university programs, professional training programs and as reference document (hardcopy and ebook);
- a database (wiki?), filled and continuously updated.



LCA & CE integrated LCA databases and BIM

Formalise the position of straw as a building product

In the building industry more and more advanced instruments are used for design (aesthetic, construction, installation), construction management, logistics, integral building process management and maintenance.

Building Information Management dresses the need for an integral information document, accessible by all chain partners on a certain project.

BIM uses a design library with normalized (CE) building components (related to EuroCode).

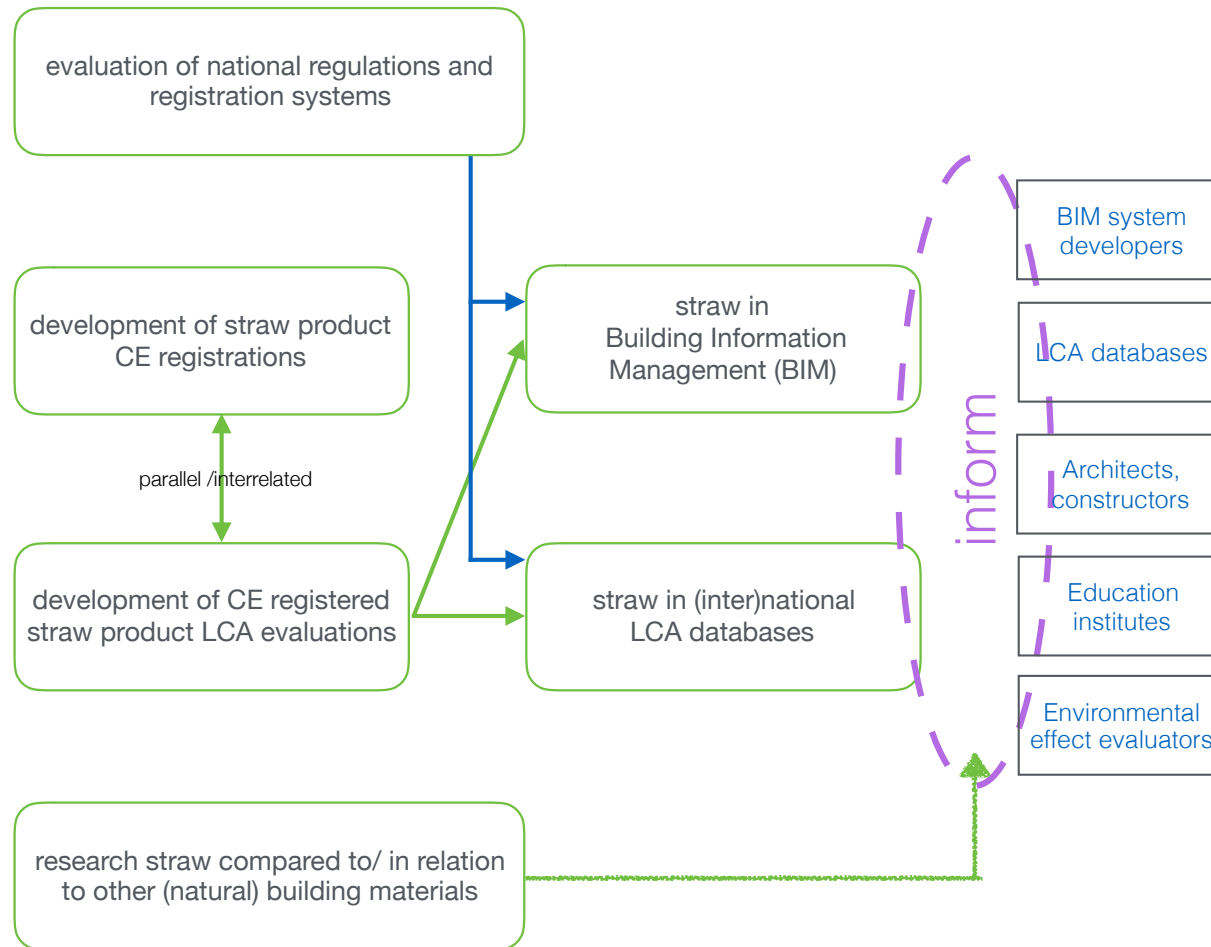
Related to this technical/ characteristics normalisation is the still in development- environmental normalisation, based on Life Cycle Analysis evaluations based on ISO 14040.

These LCA's, saved in accredited databases, serve as basis for environmental evaluations of building(s) like BREEAM, LEED, and

To integrate straw better in the the building methodology we envision the description of normalised straw products (strawbales and prefab straw modules) in the BIM library. Related to this CE registration and LCA evaluations of straw related building elements should be developed.

The communication of EuroCodes and the registration of straw in BIM libraries and LCA databases his a result of this project.

Furthermore it is important to be able to 'position' straw in relation to other (natural) building materials, thus facilitating optimal choices for applicants. This relates to straw itself but also too the variety of complementing products (wood, clay etc.)



Quality instructions, improvement and assessment

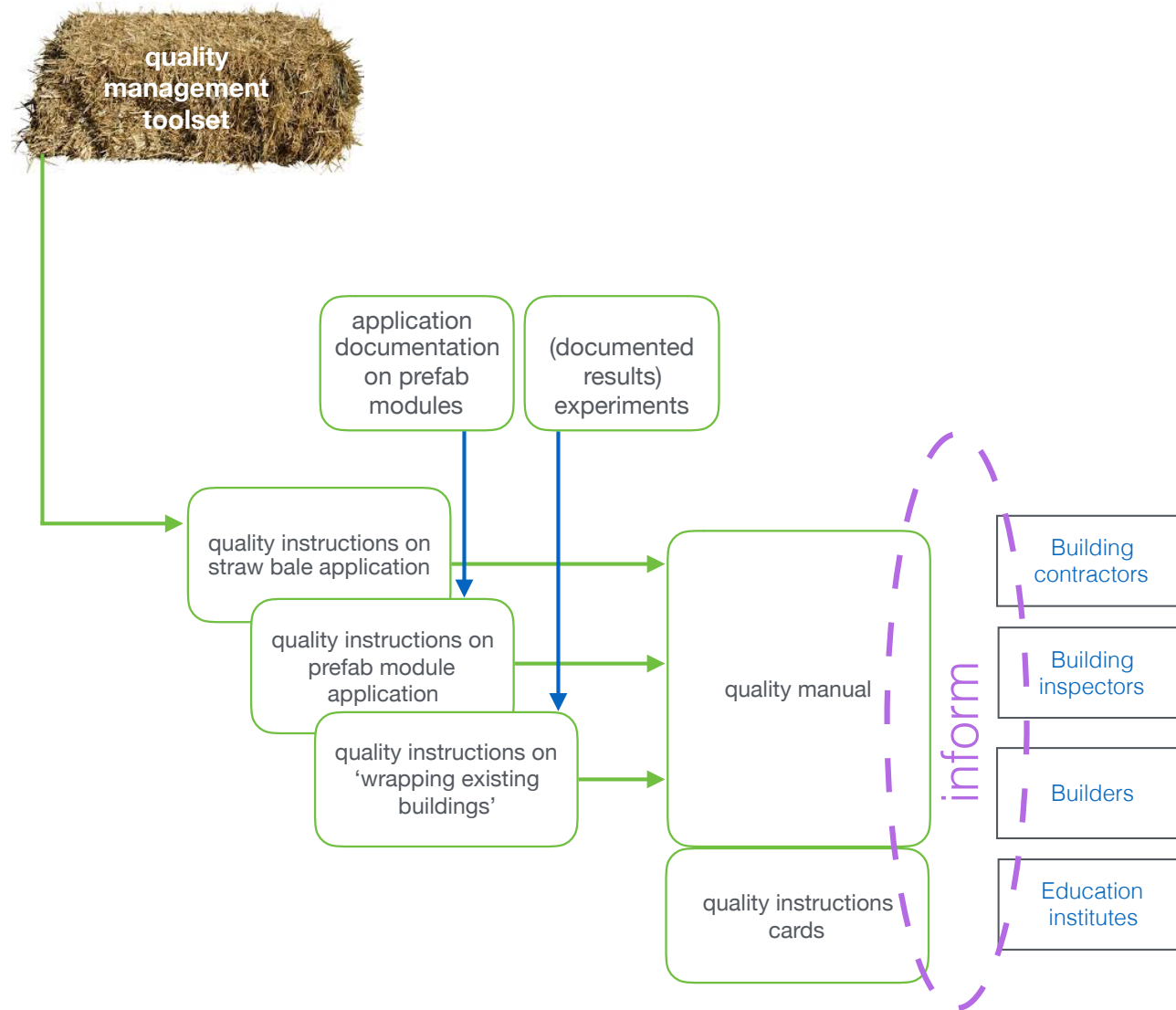
The perception of the applicability of straw as a quality building material has a lot to do with perception (current beliefs, appreciation of the working approach (strawbale building, load bearing, prefab modules).

The preparation and implementation of straw in building is necessarily related to the properties of straw and related materials.

So far a lot of experience has been built with 'classical' straw building approaches. The quality insurance (and inspection criteria) are available but should be transformed to a collective document (and translated). Adaptation to local building legislation has to be checked.

New(er) straw applications like prefab modules (bearing/not bearing), techniques for wall facades and the development of packing existing buildings with straw are researched in the various building projects, thus creating knowledge, experience and the need for documentation (and dissemination).

Important is the dissemination of knowledge to the building inspection responsible officials (public and private), in relation to the local regulations/legislation.



Straw in (professional) university programs

Straw and related bio-based materials are till now not part of the building curriculum of (professional) universities.

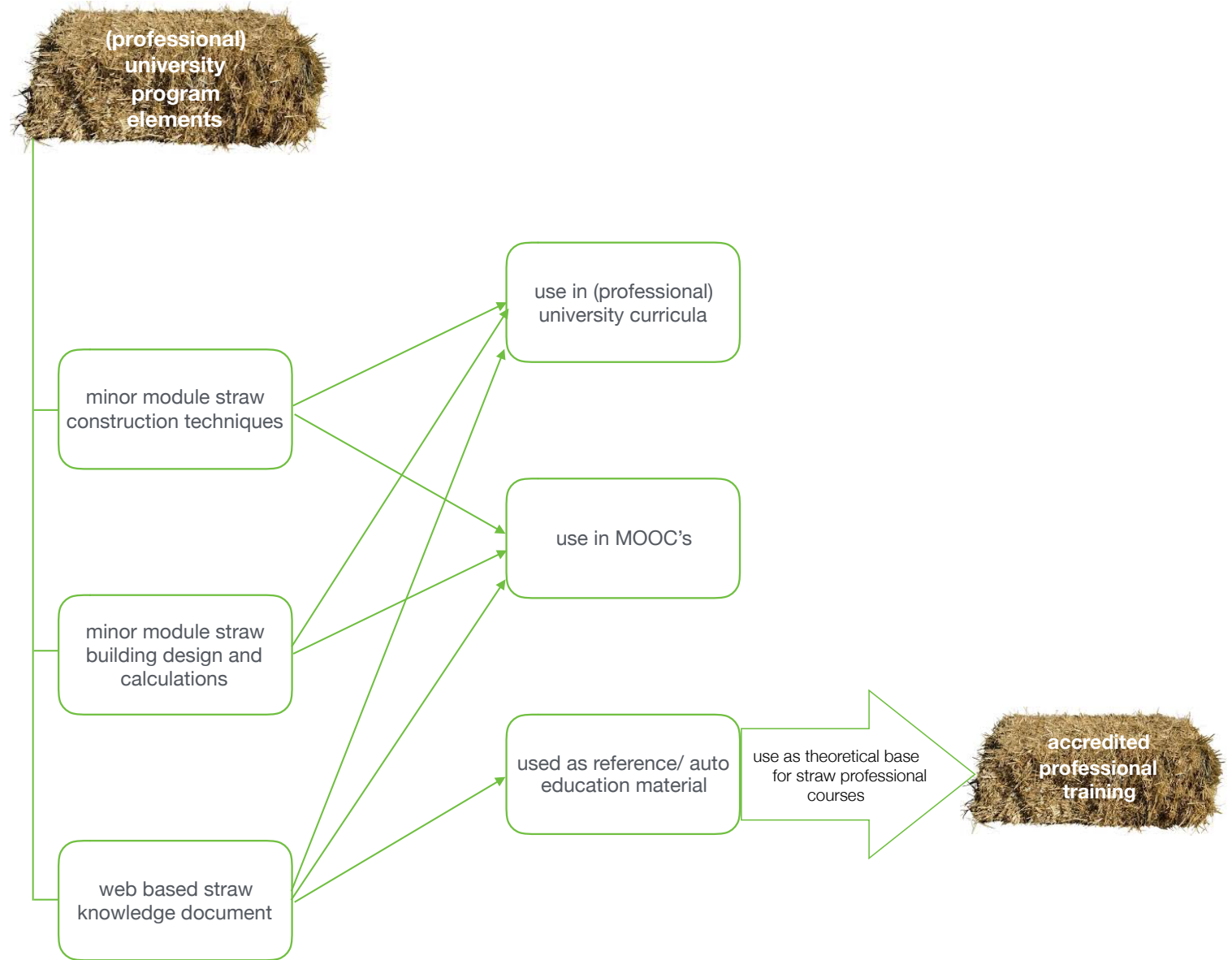
We aim for the development of two (professional) university level program elements:

- a (minor) module of 2 EC (European Credits= 56 hours of study) in straw building construction techniques;
- a (minor) module of 5 EC (European Credits= 56 hours of study) in straw building design and calculations.

These modules:

- will be introduced to (professional) universities;
- will be organised/executed as MOOC (Massive Open Online Course, which is available for everyone willing to broaden his/her knowledge on straw building;
- can be (co-)developed.

The theory for these modules will be documented in a online available 'straw knowledge package', a webbased reference document for straw professionals



Straw in schools and public buildings

Straw so far has been applied mostly in houses. More recently (since 5 years) it has been applied in schools, apartment buildings (till 9 stories) and utility buildings, most of this in France.

Straw in renovation

The use of straw (and related materials) for renovating/isolating existing building is so far hardly known. Knowledge/experience has to be developed.

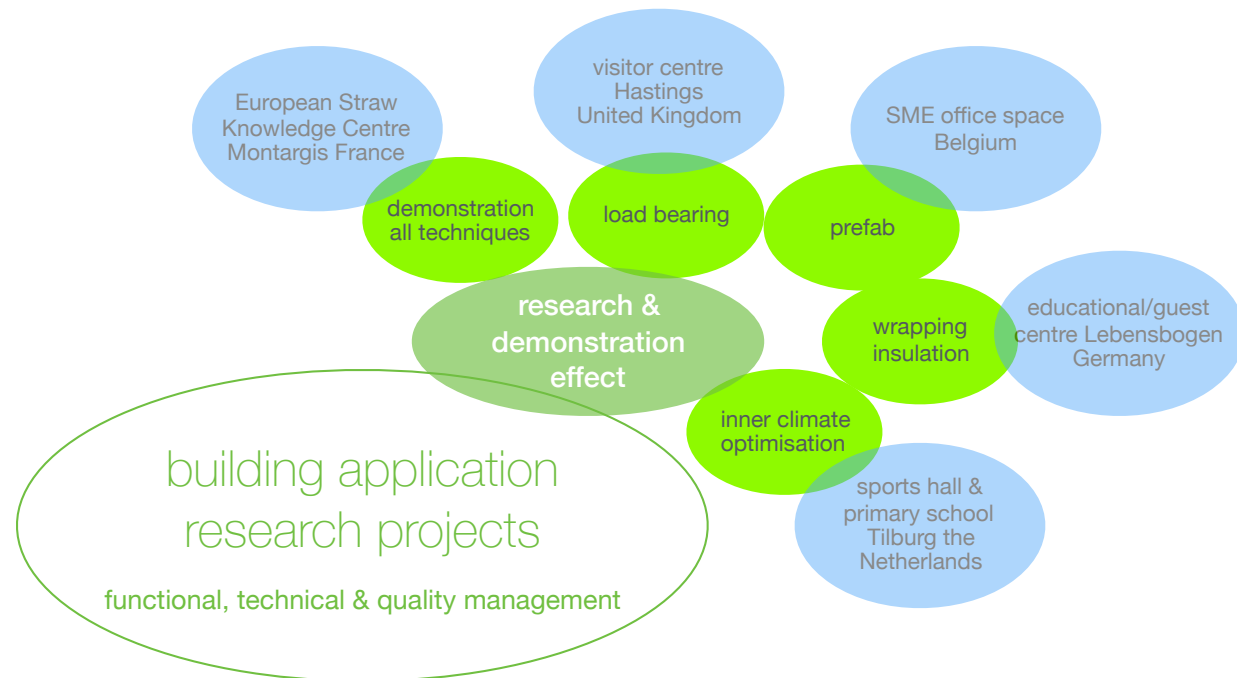
Straw and clay for inner climate optimisation

Growing to a situation of zero/reduced (fossil) energy consumption should be combined with the development of healthy inner climates in houses, schools and office buildings. The use of straw and clay, applied in an airtight construction and combined with advanced ventilation and heating/cooling solutions, is part of environmental and healthy solution.

Communicating straw by demonstration

Telling about the possibilities and advantages of straw in building is one. Clearly showing the effect (and communicate the showcases) enhances the impact

Up Straw creates practical research & demonstration in various functional situations in France, Belgium, Germany, the United Kingdom, and the Netherlands.



Straw professional training

In England, Germany, France and the Netherlands training modules were developed and are implemented.

The Leonardo project, an Europe funded cooperation project, facilitated the creation of a straw professional training curriculum.

At this moment practice/craftsman oriented training programs are executed in France, the United Kingdom, Germany and France.

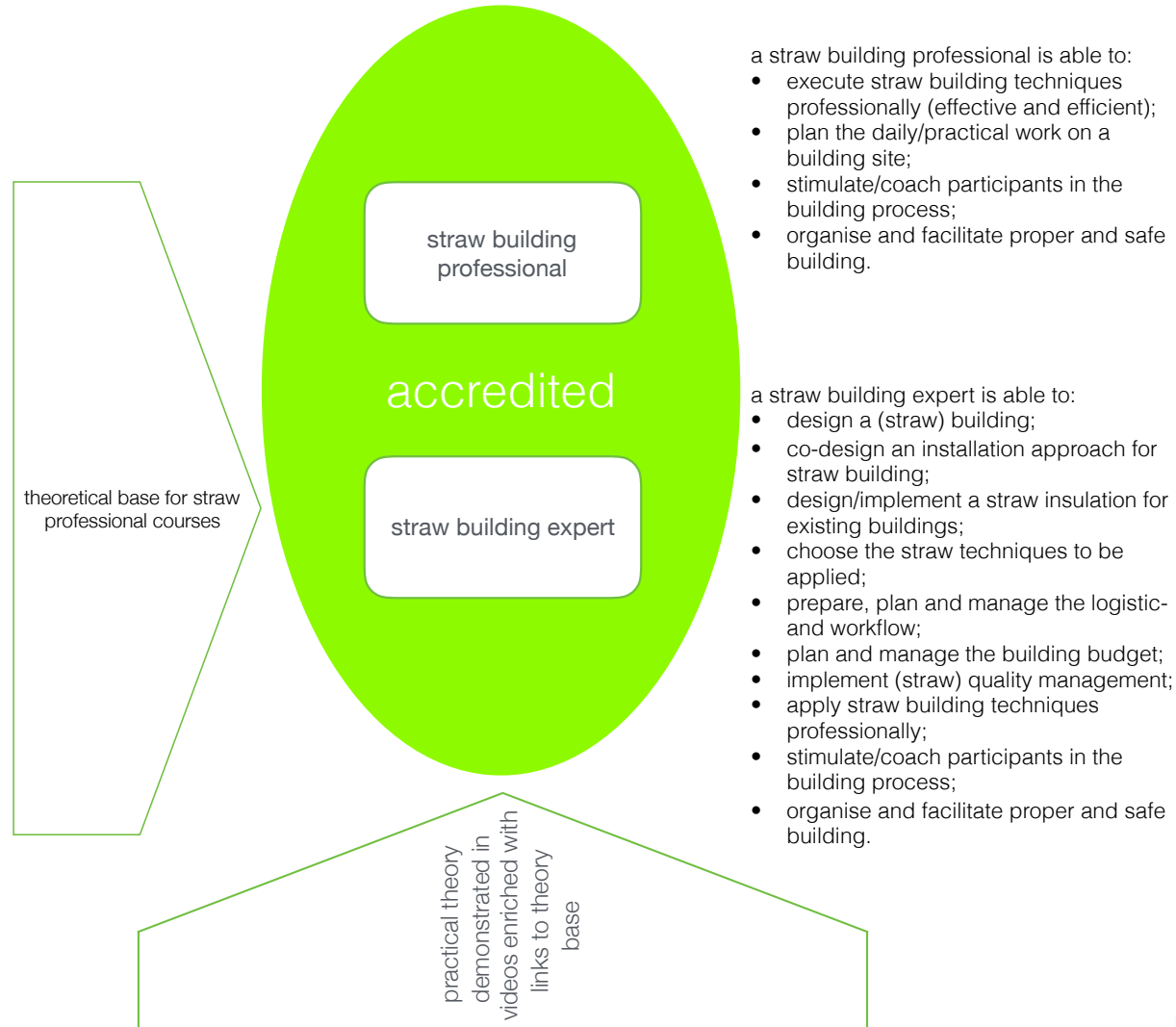
None of these programs is 'officially' accredited. Furthermore they differ in their orientation and execution modi (weekend, modular, spread over various modules etc).

We aim for a set of progressive training elements, to be accredited on medium level (craftsman/ straw building professional) and higher level (-post- professional university level-straw building expert).

The 'practical theory' is documented by instruction films, enriched with links to the theoretical base for straw (professional) courses.

The programs can be (co-)developed by the School for Natural Building, Fasba, CNCP & SBN.

These programs will be accredited by the Centre for Post Initial Education (part of Lloyds of London) in Rotterdam.



Up Straw communication approach

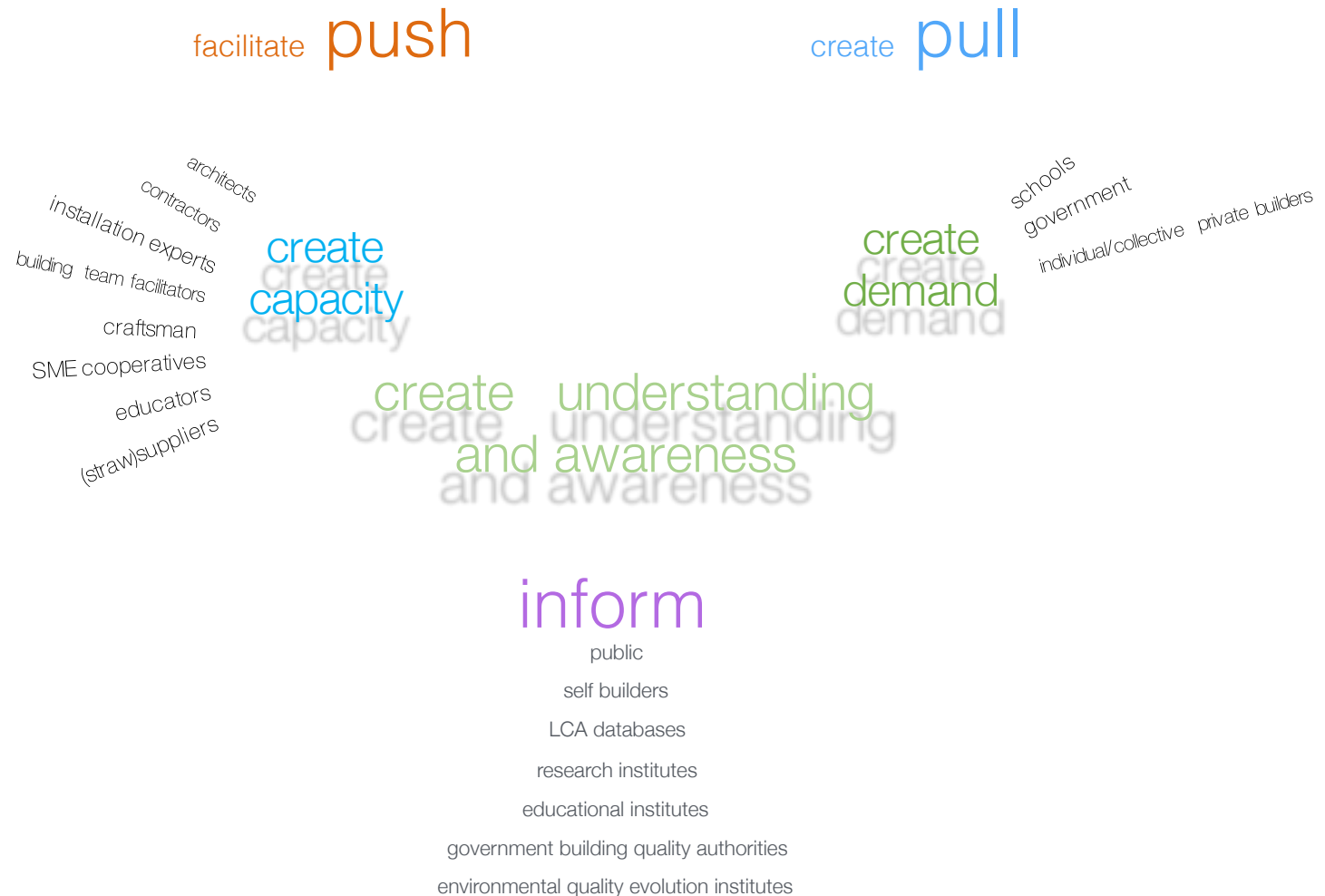
In communicating straw we aim for a two sided approach:

- creating demand for straw building and renovation in three main fields of application:
 - schools;
 - government;
 - private builders (individual/collective).
- create knowledge about and understanding of the possibilities/advantages of straw application with building professionals:
 - architects;
 - contractors;
 - craftsman;
 - building team facilitators;
 - contractors;
 - installation experts;
 - SME cooperatives;
 - (straw)suppliers
- create knowledge about and understanding of the possibilities/advantages of straw application with educators.

Scope

We have limited time and limited resources. That makes it important to focus communication activity. That is why we focus on schools, government and private builders in creating demand.

Creating capacity we try to do by educating/stimulating existing professionals and educators (by stimulating/facilitating straw as element of the curriculum).



Up Straw communication approach

Up Straw communication will be organised in a focus group approach and a general communication stream.

We recognise/choose the following focus groups:

Building professionals

- research information dissemination;
- accredited straw training program;
- SME training/coaching program;
- (professional) universities:
 - curriculum modules on straw building;
- primary/secondary schools:
 - children/youngsters straw communication material

Local/regional government

The (local)government (regions & municipalities) will be approached with examples of public straw buildings and renovation/and examples of implementation of maintenance optimisation with natural building materials (as straw) .

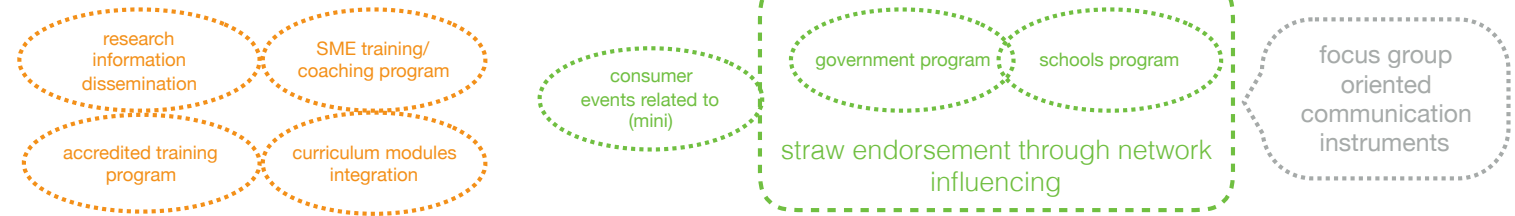
Schools

Schools can be built/renovated with straw/clay/wood. Inner climate (and it's effect on learning) is an important factor in effective school buildings.

General communication

Website information and a continuous discourse on straw (leading to the website) on the social media, will inform the public. Communicative campaigns via social media and a regular email update address networks and groups.

Straw events In partner countries: two day straw event in 2018 in provincie North Brabant.



facilitate **push**

create **pull**

- architects
- contractors
- installation experts
- building team facilitators
- craftsman
- SME cooperatives
- educators
- (straw)suppliers

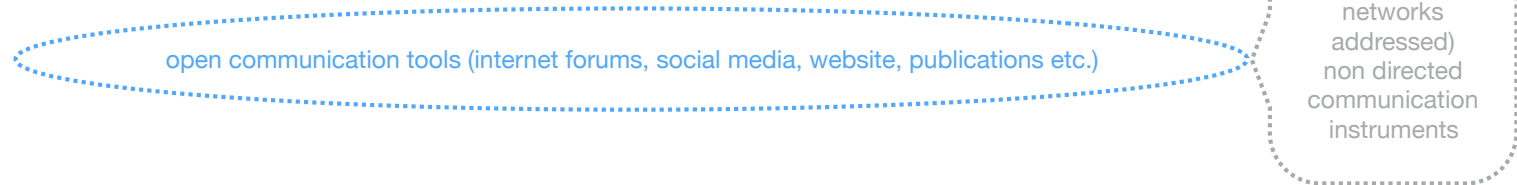
create capacity

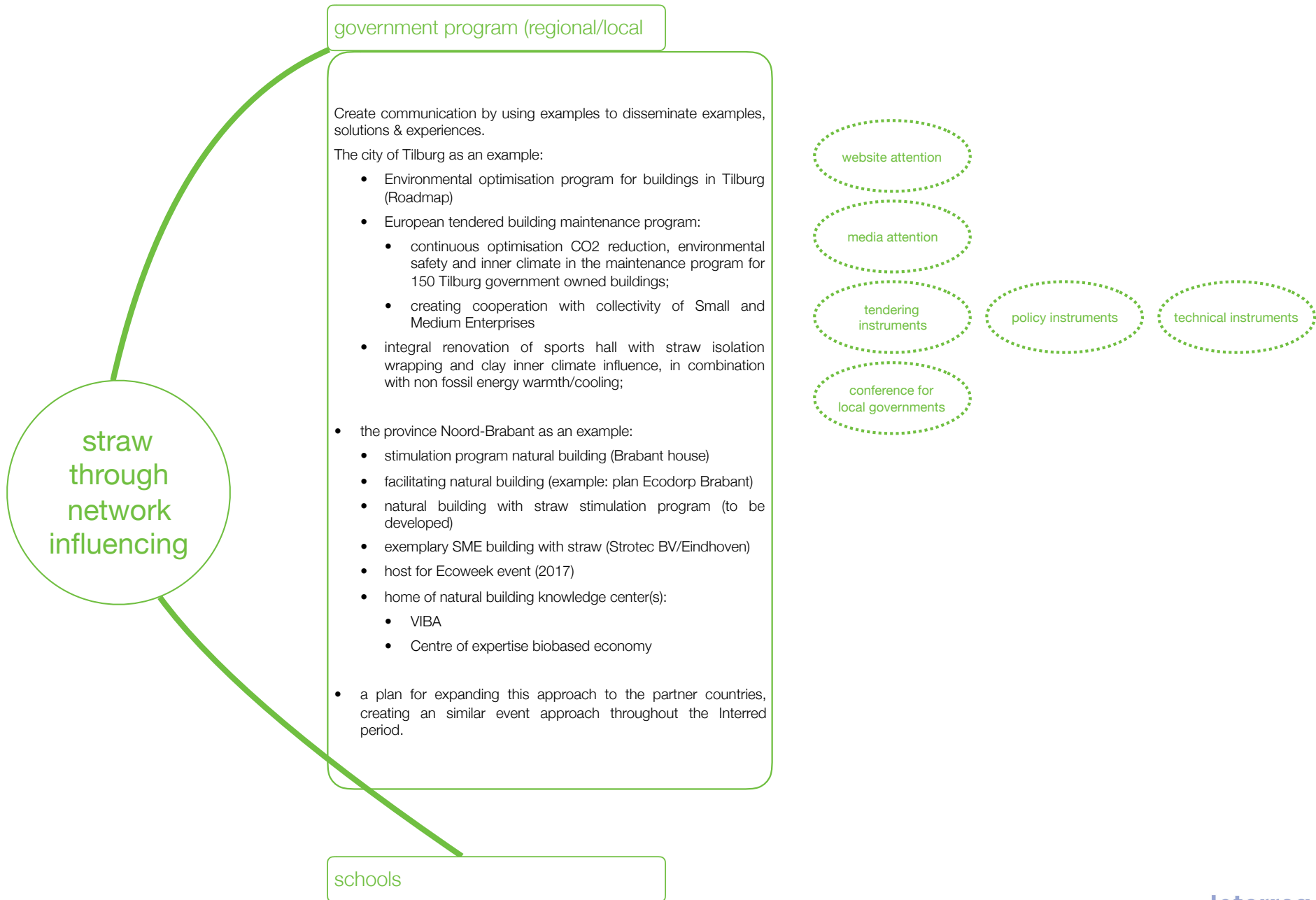
- schools
- government
- individual/collective
- private builders

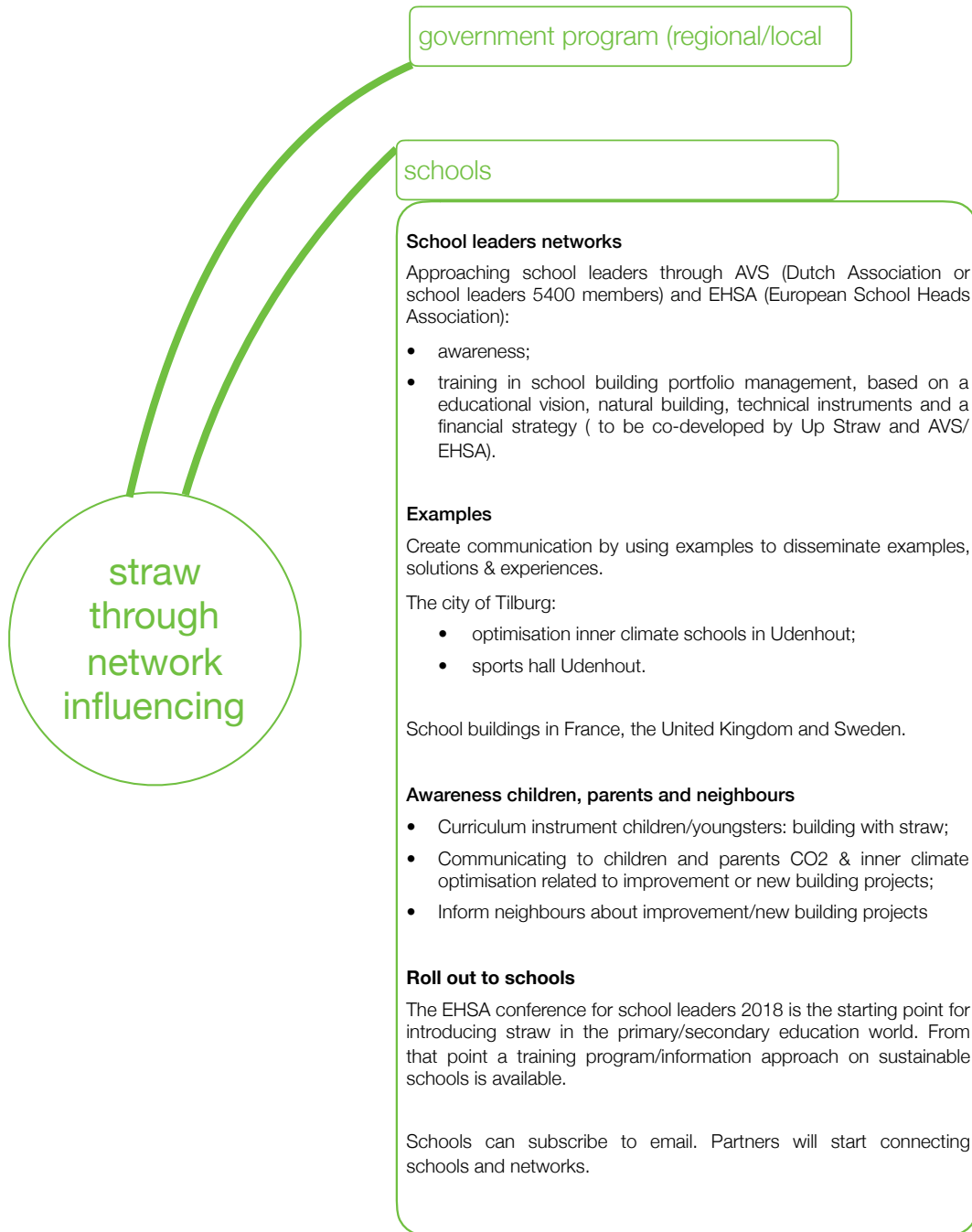
create demand

create understanding and awareness

inform



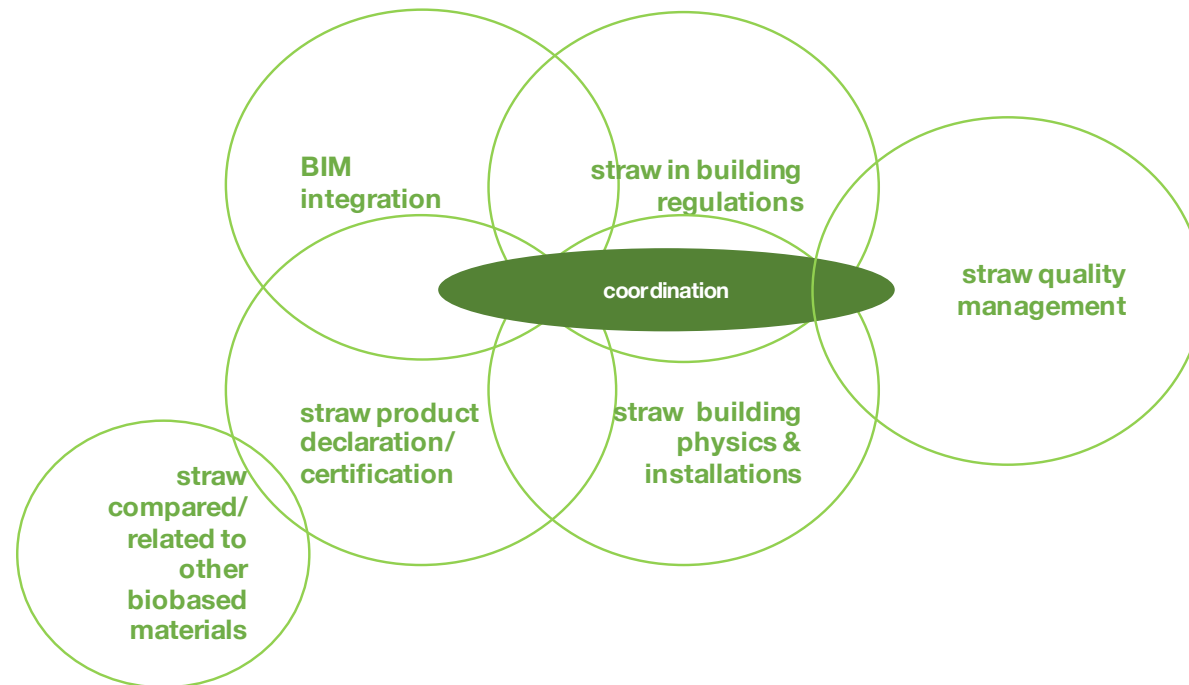




Interrelations and coordination

Research and the enrichment of already available documentation is interrelated in the various field.

It is important to overview and coordinate the (interrelation) between the various fields.



communication
research, production and dissemination
market development
exemplary projects

