Executive Summary

1) *Background and brief*

The provincial authorities have been appointed by the Dutch state to direct regional economic policy. Economic recovery and employment are also central issues for the provinces of Gelderland and Overijssel during the period 2015-2019. One of the sources of new employment is the growth and continuing development of businesses. The provinces have the support of various bodies including the European Fund for Regional Development (EFRD).

One prerequisite for the growth of businesses is the availability of adequate finance. The ERFD programme offers the potential of providing subsidies specifically for the innovation phase. The primary target group here is business, and in particular the "small to medium enterprise" (SME), seen as the "engine" of the regional economy, with a focus on the agricultural and food sectors, high tech systems and materials, life sciences and health and energy and technology, as well as cross-overs with ICT, water, the creative industries, chemicals and manufacturing industry.

As well as the subsidies there is the possibility of providing support by means of the provision of so-called "revolving capital", for example loans or participations. This ex-ante analysis provides a response to the question whether it is necessary and useful to move to supply such revolving capital, specifically from the Oost-Nederland Operational Programme (OP) 2014-2020, the programme by means of which the EFRD resources are invested in the regions; and if so, by what means this can be effectively and efficiently arranged.

2) *Is there a need to intervene in the capital market in order to finance business innovation in Oost-Nederland?*

This analysis seeks to answer the question whether "revolving" investment in the regional economy is useful and necessary.

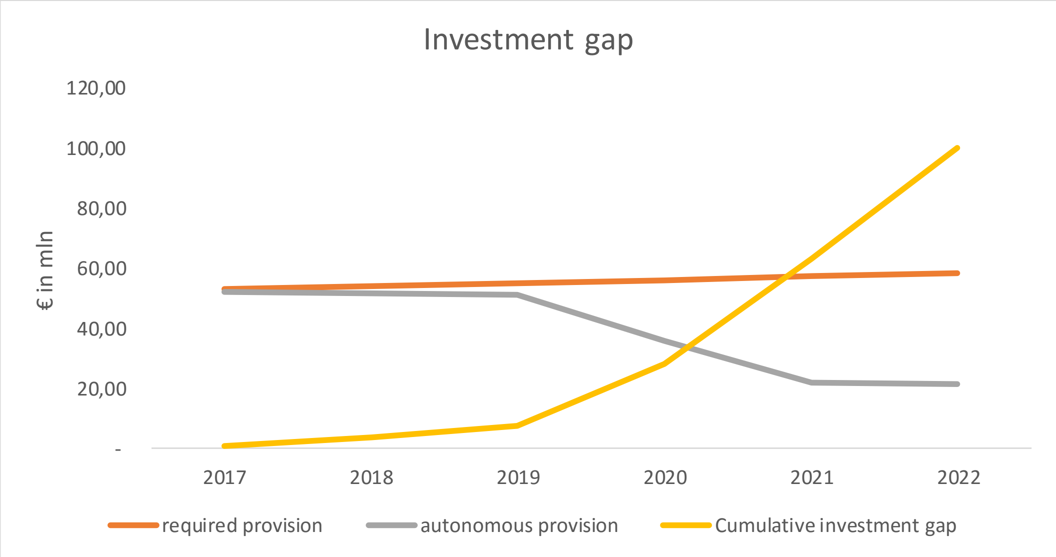
1. Is there a gap in investment, or a shortage of capital to finance innovation among businesses in Oost-Nederland in the target sectors and at the TRL levels (4-8) targeted by the EFRD Operational Programme? A significant question here is whether sufficient capital is available to allow the innovation objectives for 2023 to be achieved.
2. Are there failures in the capital market for innovation finance for business which would legitimise government intervention?

This ex-ante analysis provides answers to both questions:

On the first point, the Oost-Nederland Capital Market Investigation showed that there is an overall annual shortfall of around €118m in Oost-Nederland. This ex-ante analysis shows that there is an investment gap of around €100m for the period 2017-2023. This is the (theoretically calculated) shortfall in finance for innovation which would allow the achievement of the envisaged 10% rise in the total revenue of technological innovators from new products or services.

With investment of around €10m during the period 2017-2020 there can hardly be talk of an investment gap in Oost-Nederland. The wide availability of EFRD subsidies plays a significant role here. The EFRD subsidies will disappear from 2020 onwards. A substantial gap will appear between the capital required to achieve the innovation objectives (the "required capital") and the capital available ("autonomous provision"). This investment gap will amount to around €90m in the period 2020-2023.

Figure A Schematic Representation of the Investment Gap



It is important to note that the shortfall in finance for innovation in both regions as demonstrated in the Oost-Nederland Capital Market Investigation will emphatically continue to be a factor during the initial phases of the innovation cycle (TRL 1-3), for which the most significant source of subsidy (the EFRD programme itself) is not available.

On point 2, there can be said to be market failures in the capital market providing finance for innovation for SMEs, thereby legitimising state intervention. This market failure is to be found (as demonstrated elsewhere in this report via scientific studies as well as sources on the ground) in particular in:

a) "Information asymmetry": a distorted relationship between the perception of costs and risks as against potential yield/success and
b) The failure to take sufficient account of "positive external effects": a distorted relationship between the extent of transactional costs/risks and the potential direct profit versus the wider external effects, sometimes referred to as "non-internalised benefits".

This position as a whole is deemed to represent market failure, and may legitimise state intervention.

3) Is it sensible to move now to set up a set of "revolving" financial instruments using ERFD resources?

The most significant findings from the analysis are as follows:

a) On balance it appears that in order to meet the objective of a 10% increase in the revenues of technological innovators from new products or services as formulated in the EFRD Operational Programme, it will be necessary to ensure adequate sources of finance over the entire period. The Oost-Nederland Capital Market Investigation and this ex-ante analysis make it clear that, on balance, action on this point is legitimised. It must however be well timed and precisely targeted.
a) The Oost-Nederland Capital Market Investigation noted that a significant element of the regional innovation funds will dry up within a 2-3 year period. In this ex-ante analysis we subsequently observe that by far the largest element of the subsidy on offer (EFRD) will fall substantially after 2020. Where any potential new EFRD programme after 2020 is concerned, it is uncertain whether and how resources will come to the regions (it is possible that this may

be partially "revolving"). This means that it may now be relevant to invest an element of the available funds for subsidy on a revolving basis, so as to ensure that some or all of these resources are also available on a longer term basis, or otherwise for the period following the drying up of the most significant existing sources:

b) Subsidy may be a suitable instrument for TRL phases 4 to 8[1] as targeted by the EFRD PO. Many innovations can however also be well served by a revolving instrument. On balance that is a more efficient manner of dealing with public resources (there is after all an obligation as well as a reasonable expectation of the resources coming back, while taking account of the risk of failures)[2]. The revolving deployment of funds also entails a definite stimulus for the entrepreneur, which is not the case with subsidies;

c) The shortfall in the supply of capital will be evident in both Overijssel and Gelderland, with the shortfall in Overijssel smaller in absolute terms, but larger in relative terms due to the scale of the regional economy. This pattern is however also due to the relatively more limited allocation to Overijssel of the available funds from financial instruments and sources of subsidy (including EFRD itself). This is a result of the smaller scale of the regional economy (the ratio of Overijssel to Gelderland is 1:2).

Where the chosen strategy is to restructure the EFRD subsidies as revolving instruments (in whole or in part), a number of further options come up for consideration:

- Working with a mixed form at EFRD level: partly keeping the subsidy available and partly deploying the resources on a revolving basis. In order to avoid giving rise to competition between these (as also identified under "lessons learned") it is important that the distinction should be made clear and that the aim of and target group for subsidies as against revolving resources is sharply demarcated (for example by restricting subsidies to TRL phase 6, or by requiring collaboration with knowledge institutions for the subsidy component). The remainder would then be served with the revolving instruments;
- A combination of subsidies and revolving resources at the level of the financial instrument: this would then involve deployment at fund level as "first loss", alongside the public, private and semi-private contribution of capital. The fund manager would then receive the EFRD subsidy, while the fund's product would be exclusive of subsidy;
- The offer of a mixed product ("blending") at end user level: an applicant would then have the opportunity to receive part in the form of subsidy (repayment not required) and part in the form of a revolving product (repayment required). In the case of innovations this would reflect the actual situation while reducing the risk component on the revolving element.

The (partial or complete) restructuring of subsidies into the form of a revolving instrument (or a mixed form) would probably have the effect of raising the threshold and might thereby have a negative impact on the absorption rate of EFRD funds. The financial benefit and the attractiveness of a subsidy are greater for a business than is the case with a revolving instrument. On the other hand it may be advisable to develop learning experience with revolving resources partly topped up with EFRD, or to have such a structure in place, in view of the expectation that the European Commission will require that the deployment of resources in a possible subsequent round of EFRD programmes (after 2020) must be partly revolving in nature. A further factor in the context of the period/performance

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[1] In the specific case of TRL 3 (where a sizeable capital market shortfall was identified by the Capital Market Investigation) it would be advisable also to open up a financial instrument under EFRD for this phase. A revolving instrument is in practice often suitable here, and revolving instruments are a more efficient means of dealing with public funds.

[2] See the quantitative support for this in Section 5.4.

framework/N+3 regulations under EFRD is that resources are required to be committed for a specific period. In the case of subsidies costs must be incurred by the beneficiary and the subsidy must be provided by the Management Authority. The implication for the deployment of subsidies from the current EFRD resources is that the Management Authority will have committed the resources by 2020 at the latest. In the case of revolving instruments the finance must be provided to the beneficiary by the Management Authority, which can take place up to 2022. The decision for the responsible government agencies is then in fact between the more efficient deployment of public resources and a potentially lower level of absorption (with the associated risk of less utilisation of the EFRD resources).

In short, and in line with the findings of the Oost-Nederland Capital Market Investigation, there appears to be a shortfall in financial resources to finance innovation by business. This also applies, although to a significantly lesser degree, when we look in the context of this ex-ante analysis at the segment targeted by the Operational Programme. Taken in conjunction with the points made above, one might consider a supplementary set of instruments, provided these can be deployed in an appropriate and effective manner. This will be further developed below: if a financial instrument were to be developed, what criteria would it need to satisfy?

4) An outline framework for the structure and content of a set of financial instruments

The starting position is that a financial instrument must facilitate an infrastructure resulting in a better performing and more coherent market. Important criteria for this are the strengthening of "investment readiness" or of the quality of the innovation itself, the quality of the business case and the safeguarding of adequate entrepreneurial capacity. This means that a set of financial instruments must be embedded in an overall structure which also offers such features as business development support (knowledge and expertise in relation to "investment readiness" and the quality of innovation, for example via a café model or palette of choices (possibly including vouchers), advice, support, incubators, network support etc. as well as support to the entrepreneur (e.g. via coaching/mentoring).

The added value of a potential additional financial instrument derives from the following characteristics:

- Accessibility of additional capital required for (potentially high-risk) innovations:
- The target group consists of existing businesses (in all phases of the lifecycle) as well as new/start-up businesses, provided these are engaged in innovation, including collaborations between businesses and between businesses and knowledge institutions.
- Enhancement of the valorisation flowing out from the knowledge institutions towards the business community (spin-outs) and bottom-up innovation flowing out from the business community towards the knowledge institutions (spin-ins);
- To tackle the risks in the "valley of death" (both technological and commercial) of TRL 3-8, and therefore including TRL 3 (and ideally also via targeted subsidies in TRL 1-2[3]). The scope of TRL 3-8 is sensible as this leaves open the opportunity to continue through the cycle even in the later phases of innovation, where in practice there is often a need for additional or follow-up finance following the initial development. Only thereafter can the market step in with full effect;
- Ticket sizes must be able to vary, from the relatively small (e.g. from 100k upwards), with an average for example of around €500k (with a high risk profile)[4]. Exceptions to this allowing

[3]The current subsidy orientation with respect to TRL 4 - 8 in the EFRD OP would need to be adapted for this purpose.

[4] The Oost-Nederland Capital Market Investigation indicates that demand is also present in the innovation phase for ticket sizes up to and beyond 2.5 million.

higher amounts (e.g. between 1 and 2.5 million) must be possible, provided this ties in with the total scope of an instrument where responsible spread of risk is concerned;
- Periods must be able to be relatively longer (multi-year) commitment, for example also 7-9 years, depending on the requirement as set out in the business case;
- Instruments targeting early innovations are in general revolving only to a limited extent. The risk/return profile presents difficulties, the risks inherent in innovation (technical performance, acceptance, profitability) are obvious;
- A financial instrument targeting TRL 4-8 will be revolving to some degree, with an anticipated order of magnitude of 40% to 60%, with around 33% as the lower end of the bandwidth where TRL 3 is, as recommended, also included;
- The leveraging effect (a multiplier via applicants' own contribution) may vary with the TRL phases but on the basis of figures gained from experience and the proxies of funds elsewhere will amount to around 33% (with bandwidth ranging from 10% to 50%). Finance through the fund will then be at around 50% to 90%.
- A total leveraging effect of around 2.2 to 3.3 must be achievable (through a combination of co-investment at fund level and the private contribution of the end user). This may come out even higher if multiple levels of co-investment can be achieved (e.g. via fund-in-fund);
- The financial product may range from standard loans to own capital/participations, as well as mixed forms such as the so-called mezzanine (subordinated loans, convertible loans). Mezzanine financing is in many cases most suitable for the innovation phase;
- The financial product must be able to provide "permitted state support": discounts on interest, but additionally also favourable conditions such as the absence of repayment penalties, extended periods, working with the "rolling up" of interest/repayments etc., because businesses in this phase are not always in a position to cope with repayments (an alternative is the co-financing of interest payments);
- It is important that a new set of instruments also offers businesses the opportunity to contribute/co-finance "in kind" and not exclusively in financial terms. This may be necessary in view of the scale of SMEs in particular, as well as the lack of cash flow in this phase;

5) ***No introduction of a new, separate instrument; organise a "facility" within the existing ecosystem and set of instruments***
   - It is important that an "instrument" is properly embedded in the existing structure of finance providers. The Oost-Nederland Capital Market Investigation had already noted that the provision of instruments/funds etc, in Oost-Nederland has become unmanageable for business. It must therefore instead take the form of a "facility" (with a different level of effectiveness, higher level of acceptance of risk etc. than a new fund) which could be attached to all existing players or existing instruments. Ideally this would contribute to a more recognisable structure for the finance offer (greater transparency, mutual coherence). Forms allowing this would include for example placing a pot of money with an existing player, or linking to an existing instrument, where the provider would then manage the drawing down of these funds "behind the scenes";
   - Allowing drawing via other parties, for example as a co-investment vehicle (if fund x carries out a project then our fund would also participate 50%) or as a communal pot where parties now acting individually would come together to provide further development.

In view of the variant profile compared to many existing instruments (in connection with innovations at an earlier stage, the higher risk profile etc) it will be sensible to direct marketing very specifically to the target groups (both existing businesses and start-ups/new businesses) so that the pipeline is well filled. The passing on of "not appropriate there" queries from existing providers is also relevant. These matters could for example also be agreed via the impending initiative for a Finance Board in Oost-Nederland.

6) A framework taking account of lessons learned from experience and from instruments developed previously and elsewhere

The arrangements sketched out above take account (as emphatically requested by the European Commission) of the lessons learned and of experiences with instruments with similar objectives set up previously or in other places. The most significant issues here are:

- Develop an "easy to handle" product without excessive bureaucracy or preconditions;
- The failure of the market in the area of financing of innovation for businesses legitimises state intervention;
- The entire innovation cycle should be covered: the emphasis should not be solely on venture capital, the seed and pre-seed or Proof of Concept (PoC) and business development phases should also be included. This will add strength to the instruments for later phases;
- Make efforts also to develop the broader finance market and attract additional private players to this area. Focus on the development of suitable financial products and packages of conditions for this purpose;
- Involve research and knowledge institutions where useful and necessary: this improves the quality of innovation;
- The motto for the investment strategy must be: flexibility, flexibility, flexibility
- Don't provide 100% finance, always build in some stimuli for the businesses themselves;
- In the financial product, consider not only running the risks (by means of loans) but also orient to the "upside" (via participations or mezzanine financing such as subordinate or convertible loans);
- Take account of an overall negative/problematic financial return; this will be significantly lower than 100%. The level of "revolvement" may range between 33% and 60%;
- Incorporating the strengthening of networks over the longer term and the transfer of knowledge are crucial;
- The independence, experience and the network of the fund management are significant;
- Use familiar working methods when setting up an instrument; avoid reinventing the wheel;
- Make complementarity and compatibility with the entire existing offer central, for example by introducing an additional facility rather than a new or separate instrument or fund.