

Memo 2006-039

**Public Procurements:  
Knowledge Intensive  
Services**

## **Public Procurements: Knowledge Intensive Services**

Commissioned by  
The Research Council of  
Norway

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# 1 Executive Summary

This memo aims to contribute to increased knowledge on how interaction between the public sector and service providers may enhance innovations. One way that such interaction may occur is through purchases of services from the private sector. So far there is limited knowledge both with respect to the size and scope of public procurements. I.e. the information we have is fragmented, and no one have been able to systematically put together experiences on how procurements may be utilised to enhance innovations and renewals in the public sector.

In this memo we have put together information from a range of sources to give a broad picture of the size and scope of public service procurements. Our goal is mainly to collect facts and figures of the size of public services procurement. However, we have as far as possible tried to relate this material to an innovation context.

One main conclusion though is that civil service accounting statistics give us a rather inaccurate picture of service procurements. The reason is that the figures are reported in a rather aggregate manner which is not really designed to extract the information we are seeking.

## **Size and scope of public service procurement**

The following key figures are though giving us some indications on the size of the service procurement:

The total public procurements in 2004 were NOK 256 billion. Government administration accounted for NOK 121 billion, while municipalities came to NOK 81 billion. Purchases in general public businesses amounted to NOK 53 billion. A major part of the total purchases is connected to investments and goods.

Service procurements stands for a minor share of total procurements. Of the NOK 256 billion of total public procurement approximately NOK 150 billion are purchases of goods and services.<sup>1</sup> We do not know how much of this is services. An ECON survey that is carried out for this report indicates that in average 14 pct of the turnover in private service businesses is connected to sales to the public sector.

A major part of the service procurements is connected to assisting services like caretakers, cleaning, etc. Purchases of knowledge intensive services (i.e. external consultants) amount to approximately NOK 1.5 billion in municipalities and NOK 3.7 billion in the central government administration. Procurements of consulting services in the government administration are equivalent to 12 pct of the total wage expenses in the administration. There are significant differences between different areas of the government administration, varying from 43 pct to 5 pct in. There are similar differences between the municipalities and the county municipalities. The differences

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<sup>1</sup> Goods and services transferred to the households and gross investments in fixed assets are excluded.

can be due to different factors, i.e. organizational form and culture. We have limited knowledge about the causes of these differences.

From this statistics we may conclude that there is a relative high degree of interaction between actors in the public and private service sector. This implies that the public sector should be considered to be an integrated part of innovation systems. Within this context, innovations may occur in at least two ways. Firstly the public sector will directly benefit from innovations in the private sector and may also contribute to such innovations through acting as a demanding customer. Second, through relative large purchases of knowledge intensive services, actors in the public sector will get access to new knowledge and will thereby be able to develop own competence.

### **Service deliveries from private sector**

To provide some more documentation on the characteristics of service procurements from the private service sector, we have conducted a telephone survey covering 303 service suppliers. Service businesses with a share of deliveries to the public sector are in several dimensions different from firms that is providing services to the private sector only.

They are in general medium sized entities, and have a relative high share of employees without college and university education.

The services delivered to the public sector are to a less degree tailored to the customers' requirements and demands to a less degree that the supplier meet the customer face to face.

The suppliers to the public sector are to a relative low degree exposed to competition from foreign market actors.

But they are to a relative high degree facing open competition tenders and the contracts are normally on relative long terms.

Such differences may help us to understand if there are systematic differences in the innovation processes between public and private sector, and between enterprises within the private sector. It is not within the scope of this report to make a full assessment of these findings. However it is also quite clear that service providers to the public sector is not a homogenous group. The public sector needs a whole range of services, and procurements will most likely contribute to innovations in many dimensions. There are also indications on that private service enterprises with a high share of deliveries to the public sector tend to be more innovative than other service providers.

### **Civil service purchases from the institute sector**

It is reason to believe that academic institutes play an important role in developing and delivering knowledge based services to the civil service. Through commissioned assignments, the public sector get access to researchers and research based knowledge. Statistics from NIFU STEP shows that assignments equal to almost 1.5 bn NOK was given to the institutes in 2004. This accounts for almost 1/3 of the total budgets in the institute sector. Hence, many researchers have funding through other channels than basis funding from The Research Council of Norway.

There are several indications that these assignments probably are contributing to innovations in the public sector. It is evident from interviews that we have had with three institutes, that senior research personnel is used in commissioned projects, even though such work does not contribute to scientific merits. In addition it is reason to believe that the relationship between civil servants and researchers is important to inspire further academic research. Assignments are also contributing to networking between civil servants and researchers. Our impression is that the relationship between civil servants and researchers are decentralised, which support network formation and diffusion of knowledge between research and government.

## 2 Introduction

This memo aims to survey the Norwegian public procurements from the service sector, both with respect to size and scope. In particular we want to investigate procurements of knowledge intensive services, both from the private and public sector.

The background for the project is to contribute to a knowledge base concerning innovations and renewals in the public sector. There has for several years been a high political focus in this area. These efforts, so far, have only to a limited degree had a counterpart in a coordinated academic research in the field.

This report aims to serve as a knowledge base by providing facts and figures on the relationship between the Norwegian civil service on one hand and other parts of the service sector (i.e. both public and private sector) in an innovation context. Innovations are defined as all changes in the public sector that are carried out in order to achieve higher welfare and/or efficiency, c.f. ECON-Menon (2005). This is a rather broad definition, and includes all kind of changes, both those that are new (inventions) within public sector and those where one body in fact is copying another.

Our hypothesis is that innovations may be stimulated through procurements of services, both directly and indirectly:

Procurements may contribute **directly** to innovations in many ways. One example is when internal processes within the civil service are reorganised to make a separation between service commissioning and service execution. Such separation may aim to accomplish increased efficiency in the service production, and may in itself be viewed as an innovation. Another example is when civil service is purchasing external expertise in order to prepare ground for changes in policy or internal processes in administrative matters.

Procurements may also support **innovations** indirectly through establishing a network between civil servants and representatives from other parts of the service sector. It is well known that such networks may contribute to innovations, e.g. through diffusion of new ideas, concepts, procedures, etc.

It is not within the scope of this report to make an overall and innovation theoretical clarification on how procurements can contribute to innovations in the Norwegian public sector. Instead we aim to characterise the size and scope of

procurements with emphasis on the relationship between the civil service, research institutes, private knowledge based service business, and private service providers more generally.

The report is organised in three main parts:

We have surveyed total public procurements distinguishing between government administration and municipality administration. Based on official data from NIFU STEP, we have also made comparisons between the financing of different research institutes with respect to the importance of commissioned projects compared to ordinary research funding.

We have also made a telephone survey to assess in more details the amount of deliveries to the public sector from private service sector enterprises.

We have conducted a case study to understand better how research institutes may contribute to innovations in the public sector, both through academic research and through commissioned projects from different parts of the civil service.

It is our hope that this report may encourage more research on the importance of service procurements for public sector innovations. In our concluding chapter we will hence raise some questions and indicate topics with potential for further analysis.

### **3 The scale and scope of public service procurement**

One of the main objects of this project is to map the scale and scope of public service procurement. We specially focus on the extent of purchases of knowledge intensive services both from private sector and from the research institute sector.

There is no clear definition of knowledge intensive services. By knowledge intensive services we mean services primarily in the form of knowledge expressed in studies or surveys, or expertise in the form of consultancy services, all contributing to the development of the core area of a business. This does not mean that other forms of services are not based on knowledge, only that they are not discussed in this memo.

Purchases of knowledge intensive services are one way for public sector to gain knowledge. There are at least to other important sources; own employees and use of knowledge financed in other ways than purchases. Examples of the latter are ordinarily grants to institutes or other centres of expertise. This is nevertheless not purchases of knowledge in the way we have defined it in this memo. This chapter focus on services *registered* in accounts and statistics as purchases, especially knowledge intensive services.

First we account for different available data sources. We document the scale and scope of public procurements based on these sources.

## 3.1 Data sources

There is no complete data source which gives detailed information on scale and characteristics of public purchases, especially not in the service field. We have therefore used data from several sources to highlight our topic in the best possible way. We have primarily used two main data forms:

Data on the demand side: This is primarily public register data which contains information of public procurements. The central government accounts are the best source to highlight the character of procurements in parts of the governmental sector. The database KOSTRA gives the best information for the municipality sector, but it does not give much information

Data on the supply side: By supply side we mean contractors who supply services to the public sector. Naturally there is no collected review of the supply side. In relation to this project we have conducted a survey amongst private suppliers, including suppliers to public sector. In addition we use data on activity and deliveries from the institute sector.

Below we take a brief look on the different data sources used in this chapter.

### 3.1.1 Statistics Norway – public procurements statistics

Statistics Norway's public procurements statistics gives data on purchases by public sector on an aggregated level.

The statistics include purchases by all governmental, municipal and county municipal administrative bodies (limited according to the rules of the national account for the institutional sector), and public business. Public owned enterprises (organized as ASA, AS and SF) are not included. Basis for the statistic is the central governmental account and the individual municipal and county municipal accounts. It is in addition based on accounts from several other governmental, municipal and county municipal bodies (among this is funds) considered a part of the administration and public business.

The statistics give no special information on the character of the purchases. The purchases are for each of the different levels (government, municipality and county municipality) divided in three:

Inputs: purchases of goods and services used in production of goods and services.

Input purchases to households: purchases of goods and services transferred to households (such as transportation services and health services).

Gross investment in fixed assets: net purchases of fixed assets with lifespan over one year.

We have been in contact with Statistics Norway regarding a specification of the statistics on public procurements of goods and services. A specification is not possible to carry out.

### 3.1.2 Central governmental account

The central governmental account includes all governmental bodies reporting to the account. Governmental businesses and The Central Bank of Norway are included. Governmental owned enterprises are on the other hand not included.

Bodies reporting to the central governmental account normally enter their account according to the governmental chart of accounts, cf. Table 3.1 which illustrates the standard entries for the central governments *own operational expenses*.

*Table 3.1 The central governments own operational expenses.  
Extract from central governmental account*

Post	Sub-post	Term	
<b>01</b>		<b>Operational expenses</b>	
	11-19	<b>Wages</b>	
	21-29	<b>Goods and services</b>	
	21	Machines, inventory and equipments	
	22	Consumption materiel	
	23	Travel expenses	
	24	Offices services etc.	<u>Sub-sub-posts:</u> Among other things expenses on data processing services
	25	Consultancy services	<u>Sub-sub-posts:</u> Among other things expenses on: External assistance in IT-services consultancy services in different projects expositions etc
	26	Free	
	27	Maintenance and operation of machines and means of transportation etc.	
	28	Maintenance of construction and installations	
	29	Operation of buildings, rent etc.	
<b>21</b>		<b>Extraordinary operational expenses</b>	
	21	Goods and services, ordinary	
	12	Wages and compensations, commission	
	22	Goods and services, commission	
	18	Benefits	
<b>24</b>		<b>Operating result</b>	

Source: Central governmental account and grants accounts' division in posts and sub specifications – the governmental chart of accounts, Circular R-101 from the Ministry of Finance, settled 30. April 2004

Post 01, operational expenses, covers wages, goods and services, and is divided in sub-posts 11-19 regarding wages and sub-posts 21-29 for expenses on goods and services.

Post 21, extraordinary operational expenses, can only be used after agreement with The Ministry of Finance. The post is used by businesses running assignment activity or income producing production. To a large extent, it is anticipated conformity between income and expenses. The post can also be used to time-limited projects not convenient to include in post 01.

Post 24 is used for governmental businesses. The substructure is different than for post 01 and 21, among other things all operational expenses are collected in one sub-post.

Statens senter for økonomistyring (SSØS) has the responsibility for the central governmental account. The official central governmental account shows data at a much aggregated level, meaning total expenses on purchases of goods and services.

Still the governmental bodies report some more information to the central governmental account/SSØS than what is showed in the official statistics. Operational expenses (post 01) are reported on sub-post level, but not on sub-sub-post level. Extraordinary operational expenses are also reported on sub-post level, but the sub-post do not separate purchases of goods and services. Therefore there is no available collected survey over purchases in central governmental administration in the detailed level of the chart of accounts. To get the most detailed information in the chart of accounts, we have to study the account of each body.

It is interesting for our purpose to highlight purchases of services, especially of knowledge intensive services. We have gained access to data reported to SSØS for 2004. We use this below to illustrate the central governmental administrations purchases of knowledge intensive services.

### **3.1.3 KOSTRA**

KOSTRA (Kommune-Stat-Rapportering) is a national system for information regarding municipal activity. The database contains information both on municipal and county municipal level.

KOSTRA does not contain detailed information on purchases by the municipal sector, especially not on service level. The database shows purchase of services for each municipality/county municipality as share of gross operational expenses and in NOK. The only splitting done in *service category* is:

Cleaning, laundry and janitor services, in total

Consultancy services, in total.

Purchases of services are divided by sector depending on *where* the municipality buys the services:

Share of purchases from private, in total

Share of purchases from own enterprises and inter-municipal businesses, in total

Share of purchases from other public enterprises, in total.

There are some problems with the KOSTRA database, such as inadequate reporting on the different posts.

### **3.1.4 NIFU STEP**

NIFU STEP is short for Stiftelsen Norsk institutt for studier av forskning og utdanning Senter for innovasjonsforskning. NIFU STEP has among other things the responsibility for statistics for the university and college sector. They have established a statistical database on resources to R&D in Norway and other countries. It is possible to get key numbers for the financing of research institutes from this database. We use this information to highlight public sectors purchase of knowledge intensive services from the research institute sector.

### **3.1.5 Own data collection**

In connection with this project, and a project regarding service purchases in private sector, we have conducted an extensive survey of private enterprises.<sup>2</sup> The survey includes 500 respondents and covers all forms of activity in Norwegian trade and industry. The sample is stratified according to the number of employees in different industries (industries are divided by NACE codes) and a geographical dimension. The purpose of the survey has been to map out the purchasing pattern of private enterprises in relation to dimensions such as outsourcing and in/out shoring of services. We have also focused on the supply from the enterprises to public sector. We use this survey below to highlight supply to public sector.

## **3.2 Aggregated public procurement**

Public sectors aggregated purchases of goods and services amounted to almost NOK 256 billion by the end of 2004. This corresponds to an increase of nearly NOK 14 billion, or 5.8 percent from the year before. The public purchases amounted to around 15 percent of gross national product.

Purchases from the public administration made up around 80 percent of the aggregated purchases in public sector in 2004. Public businesses were responsible for the remaining 20 percent of the purchases.

Table 3.2 illustrate the extent of purchases divided between the different parts of the public sector.

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<sup>2</sup> The survey has been carried out by Analysehuset AS.

Table 3.2 *Public procurement in 2003 and 2004*

Public procurement	NOK billion		Change in percent
	2003	2004	
In total	241.8	255.8	5.8
<b>A. Public administration</b>	192.5	202.7	5.3
Governmental administration	113.1	121.1	7.0
<i>of this the Defence</i>	17.0	17.2	0.8
Municipality administration	79.4	81.6	2.7
<i>of this municipalities</i>	69.1	71.4	3.4
<i>of this county municipalities</i>	10.3	10.2	-1.8
<b>B. Public enterprises</b>	49.3	53.2	7.9
Governmental ex. offshore sector	6.2	9.4	52.8
Offshore sector	37.7	37.9	0.4
Municipal and county municipal	5.4	5.9	8.3

Note: Preliminary numbers for 2004.

Source: Statistics Norway

The governmental administration is the indisputable largest purchaser, and it is responsible for around half of the purchases from the public sector in total. This part of the administration increased their purchases by NOK 8.0 billion, or 7.0 percent, from 2003 to 2004. Purchases by municipalities increased 3.4 percent. Purchases by county municipalities were reduced by 1.8 percent in the same period. This can be seen in connection with reduced number of tasks for the county municipalities. The governmental administration took on i.e. the responsibility for family care, child welfare and drug rehabilitation from January first 2004.

Around 60 percent of all purchases by public sector are purchases of services used in production of goods and services. Around 25 percent is gross investment in fixed assets, while the remaining 15 percent are purchases of goods and services transferred to households.

This means that governmental administration purchases goods and services for approximately NOK 72 billion used in their own activity. The statistics does not contain more detailed information about the composition of these data when it comes to types of purchases.

### 3.3 Purchases by the central governmental sector

As mentioned above, governmental administration purchases of goods and services used in their own activity, added up to NOK 72 billion in 2004. We will shed light on these purchases by looking at the central governmental administrations own operational expenses as entered in the central governmental account. This account includes a more limited set of governmental bodies than the statistics on total purchases of goods and services in governmental administration (the

NOK 72 billion). Purchases done by the governmental health enterprises are for example not included.

### 3.3.1 Purchase of goods and services by central governmental administration

The starting point is expenses entered in post 01 and 21 in the account. There might be differences between different governmental bodies on how they enter expenses on goods and services in the account, but we use the actual entered numbers as indicators on the scale of different purchases. The following expenses are entered in the account for post 01 and 21:

*Table 3.3 Entered own expenses to goods and services in the central governmental administration. 2004.  
Post 01 and 2. Central governmental account*

<b>Post</b>	<b>Sub post</b>	<b>Name</b>	<b>NOK mill</b>
	11-29	Expenses to goods and services	28 782
	21-22	Expenses to goods and services	5 681
<b>In total</b>			<b>34 463</b>

Source: Central governmental account, SSØS

Expenses to purchases of goods in post 21 are not separated from expenses to purchases of services. We will therefore in the following use expenses to goods and services in post 01. These expenses cover around 85 percent of the total expenses to goods and services entered in the two posts, cf. the table.

We have illustrated the expenses of goods and services for post 01 in Table 3.4

*Table 3.4 Entered expenses to goods and services. 2004.  
Sub post of post 01. Central governmental account*

<b>Sub post</b>	<b>Name</b>	<b>NOK mill</b>
21	Machines, inventory and equipments	2 415
22	Consumption materiel	3 135
23	Travel expenses	3 725
24	Offices services etc.	3 015
25	Consultancy services	3 755
26	Free	2 190
27	Maintenance and operation of machines and means of transportation etc	2 482
28	Maintenance of construction and installations	2 981
29	Operation of buildings, rent etc	5 085
<b>In total</b>		<b>28 782</b>

Source: Central governmental account, SSØS

There are no clear division between what are expenses to goods are and what expenses to services in post 01. Basically we can assume that the sub posts for machines, inventory and equipment (21) and consumption materiel (22) are

goods, while the rest are service posts. They are nevertheless very different types of services, ranging from postage and telecom services to transportation and consultancy services.

Purchases of knowledge intensive services are from our perspective especially interesting. Sub post 25, consultancy services, includes mainly expenses to external assistances in IT services, consultancy assistance to different projects, expositions etc. Sub post 24 also includes expenses to data processing services, which can also be knowledge intensive services. We have however not the possibility to separate this. We will therefore in the following focus on expenses to consultancy services as an expression of purchases of knowledge intensive services in the central governmental administration.

### **3.3.2 Purchases of knowledge intensive services**

The central government administration had in 2004 in total approximately NOK 3.7 billion in total expenses to consultancy services. The total wage cost was in comparison, just above NOK 44 billion.<sup>3</sup> For every krone spent on wages to employees, approximately 8 øre is spent on purchases of external knowledge.

In Table 3.5 we have assembled bodies in the central governmental administration after which ministry they sort by. The table illustrates the scale of expenses to consultancy services for each subject. We also show what percentage these expenses amount to of the same subjects total wage cost to employees.

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<sup>3</sup> Central governmental account post 01, sum sub-post 11-19.

*Table 3.5 Entered expenses to consultancy services grouped by subject area 2004.  
Post 01, sub post 25. Central governmental account.*

<b>Central government administration grouped by responsible sector ministry</b>	<b>Consultancy services</b>	
	<b>NOK mill.</b>	<b>Share of total wage expenses</b>
Ministry of Foreign affaires	42	6 %
Ministry of Education and Research	243	29 %
Ministry of Culture and Church affaires	70	6 %
Ministry of Justice and the Police	380	5 %
Ministry of Local Government and Regional Development	94	16 %
Ministry of Labour and Social Inclusion	433	10 %
Ministry of Health and Care Services	202	30 %
Ministry of Children and Equality	122	9 %
Ministry of Trade and Industry	42	8 %
Ministry of Fisheries and Costal Affaires	36	5 %
Ministry of Agriculture and Food	339	43 %
Ministry of Transportation and Communication	23	11 %
Ministry of the Environment	53	15 %
Ministry of Governmental Administration and Reform	48	5 %
Ministry of Finance	236	7 %
Ministry of Defence	1 356	18 %
Ministry of Petroleum and Energy	26	9 %
Random expenses	10	
<b>In total</b>	<b>3 755</b>	<b>12 %</b>

Note: The division follows the structure of the ministries in 2004, but the ministries are marked by their current name.

Source: Central governmental account, SSØS

Expenses on external knowledge (measured as expenses to consultancy services) in the central governmental administration varies considerably. This can be due to many circumstances, such as how expenses are entered, purpose, structure, access to resources, own competence in the different bodies and the implementation of special projects or handling of extraordinary events in the year in question. The data material is vulnerable for extraordinary situations because we only have access to data for one year. Such a situation can be implementation of a new IT-system, where the body could have had substantial IT assistance.

As we can see, it is especially in the areas of education and research, health and care and agriculture and food, expenses to purchases of consultancy services constitutes a major share of wage expenses. Also the areas for local government and regional development, transportation, environment and defence have expenses to consultancy services above average.

Table 3.6 shows how the different ministries used external knowledge, as expenses to consultancy services, entered in sub post 25. The review illustrates expenses to consultancy services as a percentage of total wage expenses for the respective ministries.

*Table 3.6 Entered expenses to consultancy services in ministries 2004. Post 01, sub-post 25 and 11-19. Central governmental account*

<b>Ministry</b>	<b>Expenses to consultancy services as share of the ministry's total wage costs</b>
Ministry of Foreign affaires	2 %
Ministry of Education and research	3 %
Ministry of Culture and Church Affaires	6 %
Ministry of Justice and the Police	0 %
Ministry of Local government and Regional Development	21 %
Ministry of Labour and Social Inclusion	4 %
Ministry of Health and Care Services	7 %
Ministry of Children and Equality	5 %
Ministry of Trade and Industry	3 %
Ministry of Fisheries and Costal Affaires	1 %
Ministry of Agriculture and Food	10 %
Ministry of Transportation and Communication	4 %
Ministry of the Environment	2 %
Ministry of Governmental Administration and Reform	1 %
Ministry of Finance	15 %
Ministry of Defence	5 %
Ministry of Petroleum and Energy	0 %
Random expenses	<b>6 %</b>
<b>In total</b>	<b>2 %</b>

Note 1: The division follows the structure of the ministries in 2004, but the ministries are marked by their current name.

Note 2: A post called research, competence building and evaluation is used for expenses entered under The Ministry of foreign affaires.

Source: Central governmental account, SSØS

As the table shows there are differences among the ministries on how they use external consultancy services. In the same way as for the different subject areas discussed above, the differences can be related to several conditions.

### **3.4 Purchases by the municipal sector**

As Table 3.2 illustrates, purchases of goods and services in the municipal sector amounts to around 35 percent of all public purchases. Purchases by the municipal administration have the unquestionable largest share (80 percent), while purchases by county municipal administration or purchases by municipal and county municipal businesses are substantially lower.

### 3.4.1 Purchases of services

There is no available information on what the total purchases in the municipal sector consists of. KOSTRA only gives very limited information on the purchases in municipal and county municipal administration.

KOSTRA specifies what each municipality have used on purchases of respectively consultancy services and cleaning, laundry and janitor services, cf. Table 3.7

*Table 3.7 Purchases of different services by municipalities 2005.  
NOK million*

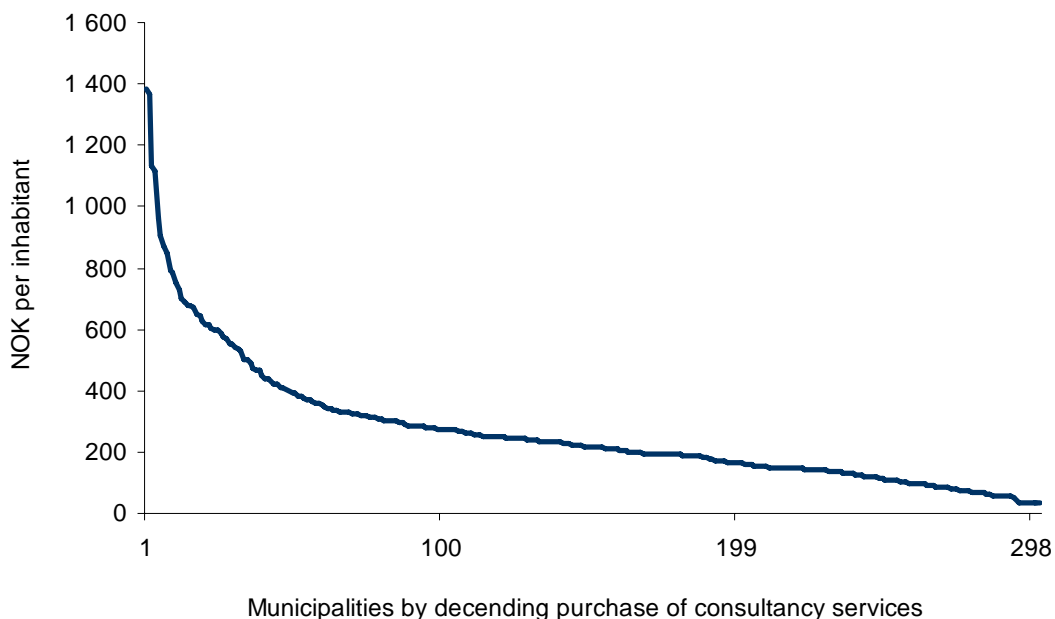
	Consultancy services	Cleaning, laundry and janitor services
All municipalities	1 228	1 185

Source: KOSTRA

As for the central governmental administration, purchases of consultancy services in the municipalities can be an expression of purchases of knowledge intensive services. The KOSTRA statistics are however not complete. 302 municipalities have reported purchases of consultancy services, and there is inadequate information for a number of municipalities. The table shows that the municipalities are using in total NOK 1.2 billion on purchases of consultancy services. This means an average of NOK 3 million for each municipality that has reported to KOSTRA. Fewer than 2 percent of the total purchases of goods and services by the municipalities are purchases of consultancy services. This amounts to 0.7 percent of total gross operational expenses in the municipalities.

We have shown the spreading of observations in the municipalities in Figure 3.1.

*Figure 3.1 Purchases of consultancy services in municipalities sorted by descending purchases per inhabitant in NOK 1000. 2005*



Source: SSB/KOSTRA

The majority of the municipalities used less than NOK 5 million on purchases of consulting services that year. The figure illustrates that the majority of the municipalities used less than NOK 1000 per inhabitant on purchases of consulting services that year. There is however great variations in the amount purchased per inhabitant. The municipality which bought the most external expertise per inhabitant bought more than forty times the purchases of the municipality that bought the least. KOSTRA gives the same review for county municipalities.

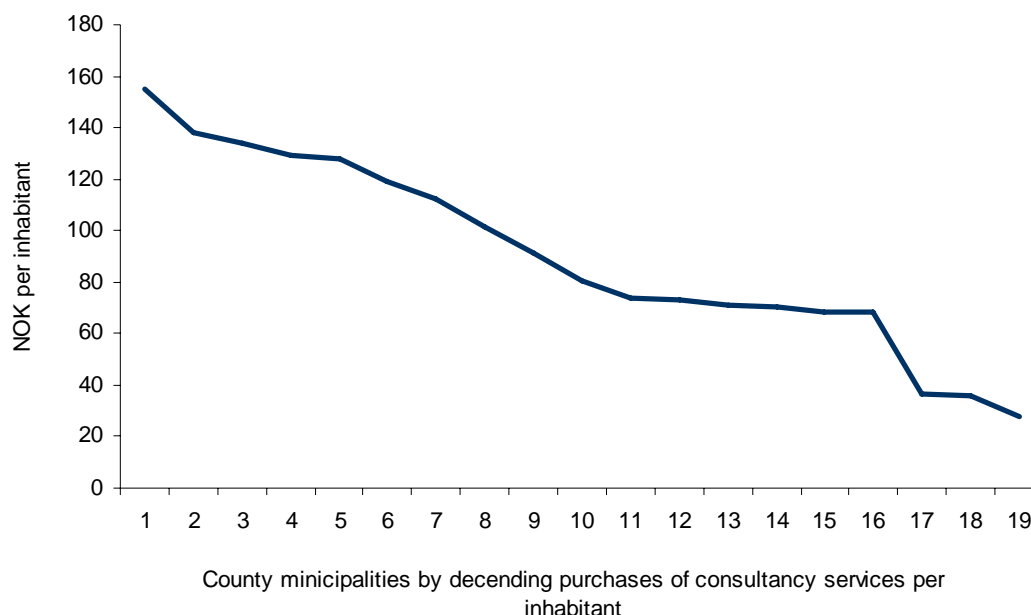
*Table 3.8 Purchases of different services by county municipalities 2005. NOK million*

	Consultancy services	Cleaning, laundry and janitor services
All county-municipalities	360	65

Source: KOSTRA

All county municipalities have reported purchases of consultancy services, in total NOK 360 million in 2005, this amount to an average of 20 million for each county municipality. This means that around 3.5 percent of the county municipalities' total purchases of goods and services are purchases of consultancy services. This amounts to 0.6 percent of the county municipalities' gross operational expenses. The spread of the observations for county municipalities are shown in Figure 3.2.

*Figure 3.2 Purchases of consultancy services in county municipalities sorted by descending purchases per inhabitant in NOK 1000. 2005*



Source: SSB/KOSTRA

The figure highlights great variations between the different county municipalities and the variations are independent of the number of inhabitants. The county municipality which bought the most external expertise per inhabitants bought more than five times the purchases of the county municipality that bought the least.

### 3.4.2 Suppliers

KOSTRA gives information on who the municipality buys their services from, cf. Table 3.9. The table includes both purchases of consultancy services and cleaning, laundry and janitor services, the same as in the paragraph above, and all other services the municipalities are buying.

*Table 3.9 Total purchases by municipalities by suppliers. 2005.  
NOK million*

	Purchases from private suppliers	Purchases from own businesses	Purchases from other public enterprises
All municipalities	8 710	4 623	2 796

Source: KOSTRA

More than half of the deliveries to municipalities are from private suppliers. It is not possible to separate purchases of consultancy services from this.

In Table 3.10 we show the same for the county-municipalities. The review includes, as for counties, both purchases of consultancy services and cleaning-, laundry and janitor services and all other services the country municipalities are purchasing.

*Table 3.10 Total purchases by county municipalities by suppliers. 2005.  
NOK million*

	Purchases from private suppliers	Purchases from own businesses	Purchases from other public enterprises
All county-municipalities	5 830	887	903

Source: KOSTRA

Most of the county municipalities total purchases of goods and services are also supplied by private services suppliers.

It is primarily in the sectors for transportation and education on the upper secondary level that the county municipalities buy services. Both sectors buy their services mainly from private service suppliers. It is not possible to separate how much of this that is consultancy services.

### 3.5 Supplies from the research institute sector to the public sector

The research institute sector is an important supplier of knowledge to public sector. The institute sector generates its income partly through grants from public authorities and partly through assignments, both for public and private sector. Money flows in and through the institute sector are expressions for recourses used on R&D in this system. An expression of this use of recourses is therefore the institutes' expenses on R&D activities.

The source of funds to the institutes is an expression for who is using the generated knowledge (the one who pays). We will take a closer look on how R&D expenses to the institutes are separated by source of financing.

Table 3.11 reports the operational expenses to R&D separated by source of financing. The institutes are grouped after some main areas after professional organization. The table shows how much of the operational expenses that are covered by respectively basis grants and other more general grants and contract incomes. The source of financing has different characteristics, and can express the type of knowledge generated. So called contract incomes are presumed to be more specific in relation to specific problems than different forms of basis or more generally grants.

*Table 3.11 Income in the research institute sector by source of financing. 2004. NOK million*

Source of financing	Total	Basis grants and other generally grants	Contract income
<i>Institutes</i>			
Institutes of social science	883	213	670
Environment and development institutes	603	101	502
Primary industry institutes	1790	848	942
Technical and industrial institutes	3218	374	2844
Medicine and health institutes	188	75	112
<b>In total</b>	<b>6682</b>	<b>1612</b>	<b>5070</b>

Source: NIFU STEP

75 percent of the expenses to R&D in total in the research institute sector are financed by contract income. There are variations between the different institute groups. Primary industry and medicine and health institutes have a large share of R&D financed by basis grants and other generally grants than the other institute groups.

In Table 3.12 we have illustrated the composition of contract income by source of financing.

*Table 3.12 Contract income in the research institute sector after source of financing, 2004. NOK million*

Source of financing	Total	The Research Council of Norway	Public administration	Trade and industry	Foreign countries	Other
<i>Institutes</i>						
Institutes of social science	670	201	269	102	60	38
Environment and development institutes	502	85	225	90	75	27
Primary industry institutes	942	174	311	261	64	132
Technical and industrial institutes	2844	436	622	1113	550	123
Medicine and health institutes	112	11	61	22	17	2
<b>Total</b>	<b>5070</b>	<b>907</b>	<b>1488</b>	<b>1588</b>	<b>765</b>	<b>322</b>

Source: NIFU STEP

Around 20 percent of the contract income comes from public administration, i.e. ministries, county municipalities, municipalities etc. Public administration bought assignments from the institute sector for approximately NOK 1.5 billion in 2004. The ministries are by far the largest buyer. This means that the central governmental administration in a much larger degree than the local government administration uses the institutes as knowledge suppliers.

### **3.6 Supplies from the private to the public sector**

As we have mentioned earlier we have conducted our own survey of private enterprises' supply of services to the public sector. We discuss some results from the survey below.

A lot of private enterprises are suppliers to public sector. Over 60 percent of the businesses in the survey are suppliers to public sector. This is however both goods and service suppliers. Because our main focus in this project is supply of services, we will only look at businesses that primarily are service suppliers.<sup>4</sup>

#### **3.6.1 Characteristics of service suppliers**

Also around 60 percent of the service suppliers in the survey reports that they have public sector as a customer. There are however variations in how much of the suppliers' turnover that is related to sales to public sector. Almost 15 percent of the businesses report that more than 50 percent of their turnover originates from sales to public sector. Public sector is a very important customer for some of

<sup>4</sup> 303 of 500 businesses in the survey.

these businesses. If we look at the number of full term employees in businesses supplying to public sector together with the share of the turnover related to the sector, we get that about every sixth employee (15 percent) in these businesses works with supplies to public sector.

Service suppliers can be classified in several different ways. Below (Table 3.13) we have used a classification based on characteristics about the supplies.<sup>5</sup> By problem solvers we mean service businesses such as consultants, lawyers, advertising agencies etc. By assisting services we mean businesses conducting, for example, cleaning and guarding. By manual distribution services we mean businesses in the fields of commodity trade and transportation, while digital distribution services include service businesses such as telecommunication and banking. By leisure services we mean businesses in the field of tourism, restaurants and hotels.

The table illustrates the share of turnover supplied in average to public sector.

*Table 3.13 Different suppliers' average turnover share supplied to public sector*

Service suppliers	Average share of turnover supplied to public sector
Problem solvers	22 %
Assisting services	20 %
Manual distributive services	10 %
Digital distributive services	3 %
Leisure services	7 %
Construction and power supply	26 %

Source: ECON

As we can see the public sector is an important customer for most of the service supply categories. Public sector is especially important for the construction and power supply sector, the problem solvers and the so called assisting services sector. For these businesses approximately every fourth or fifth NOK of the turnover is related to supplies to public sector.

We will move on to look at other characteristics of the service suppliers. In Table 3.14 we have sorted the service suppliers by size (measured by turnover) and by how large share of their turnover is related to public sector.

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<sup>5</sup> Source: ECON report 080-2005

*Table 3.14 Size of suppliers by turnover*

Size of businesses, turnover in NOK	Supplies to public sector (by share of total turnover)	
	0 percent	1-100 percent
<10 NOK million	27 %	16 %
10-100 NOK million	52 %	64 %
>100 NOK million	21 %	20 %
	100 %	100 %

Source: ECON

The service suppliers are, to a large extent, small and medium sized businesses. We observe that businesses supplying to public sector to a larger extent are medium sized businesses, defined as businesses with total turnover between NOK 10 million and 100 million.

We have also examined the educational level of the employees in the businesses. In Table 3.15 we have sorted the service suppliers by share of employees with only upper secondary education, in relation to how the businesses supplies to public sector.

*Table 3.15 Educational background for the employees*

Employees with only upper secondary education	Supplies to public sector (by share of total turnover)	
	0 percent	1-100 percent
None	37 %	19 %
Less than 50 percent	36 %	37 %
More than 50 percent	27 %	45 %
	100 %	100 %

Source: ECON

Businesses supplying to public sector have to a larger extent employees with only upper secondary education than businesses not supplying to public sector. In other words a relatively low share of the employees in these businesses has higher education.

In Table 3.16 we have shown the ownership to the service suppliers.

*Table 3.16 Ownership*

Ownership	Supplies to public sector (by share of total turnover)	
	0 percent	1-100 percent
Norwegian	90 %	90 %
Foreign	10 %	10 %
	100 %	100 %

Source: ECON

Most of the businesses have Norwegian ownership. There are no difference in ownership between the businesses supplying to public sector and those not supplying to public sector.

### 3.6.2 Characteristics of the services

We are now going to take a closer look at characteristics of the services supplied to the public sector.

Supplies to the public sector demand a relatively high degree of tailoring. With tailoring we mean adjustment of the delivery according to the unique needs of the customer. This means that smaller shares of the deliveries are standard services. The survey indicates however that the deliveries to public sector to a slightly lesser degree demands tailoring than deliveries to private sector, cf. Table 3.17.

*Table 3.17 Demands to tailoring of service supplies*

The services are tailored to the individual customers unique needs	Supplies to public sector (by share of total turnover)	
	0 percent	1-100 percent
To a very high or high degree	78 %	75 %
To some degree, very little or not at all	22 %	25 %
	100 %	100 %

Source: ECON

Service supplies imply that the suppliers to a relatively large degree meet with the customer face to face. This says something about the need for interaction between supplier and customer on the conduction of services. The survey indicates that businesses supplying to public sector to a less degree are facing demands to meet the customer face to face, cf. Table 3.18.

*Table 3.18 Demands to meet the customer face to face on delivery of services*

	Supplies to public sector (by share of total turnover)		
	0 percent	1-50 percent	51-100 percent
The services demands that the supplier meets the customer face to face			
To a very high or high degree	60 %	56 %	47 %
To some degree, very little or not at all	40 %	44 %	53 %
	100 %	100 %	100 %

Source: ECON

Service suppliers to public sector experience competition from foreign businesses at home. Approximately every fourth business supplying to public sector, experience a very high or high degree of competition in the home market. Corresponding number for suppliers supplying only private sector is every third business.

*Table 3.19 Competition from foreign businesses in the home market*

	Supplies to public sector (by share of total turnover)	
	0 percent	1-100 percent
Experience substantial competition from foreign suppliers in home market		
To a very high or high degree	30 %	24 %
To some degree, very little or not at all	70 %	76 %
	100 %	100 %

Source: ECON

However, this does not mean that businesses delivering to public sector do not face competition. Table 3.20 shows that public sector is using announced competition on assignments much more than buyers in private sector. This shows that the set of rules for public procurement are valid in this segment.

*Table 3.20 Service suppliers after degree of announced competition*

	Supplies to public sector (by share of total turnover)		
	0 percent	1-50 percent	51-100 percent
The business primarily get contracts through announced competitions			
To a very high or high degree	10 %	14 %	40 %
To some degree, very little or not at all	90 %	86 %	60 %
	100 %	100 %	100 %

Source: ECON

One effect of this seems to be that these businesses to a larger degree have more long term contracts, cf. Table 3.21.

*Table 3.21 Duration of contracts*

	Supplies to public sector (by share of total turnover)	
	0 percent	1-100 percent
Sale contracts have a duration of at least three years		
To a very high or high degree	19 %	25 %
To some degree, very little or not at all	81 %	75 %
	100 %	100 %

Source: ECON

## 4 Three Case Studies

This chapter aims to investigate competence spillovers between three research institutes in Norway and their corresponding customers. Such spillovers are important to understand to what extent and in which ways the institute sector contributes to innovation in the public sector.

The institute sector is of particular interests in this connection. First, most of the institutes have a mixed portfolio of projects combining both academic research and more development and consulting oriented projects. Our hypothesis is that this combination ensures that the institute sector represents a strong professional knowledge base for their customers and at the same time contributes to making academic research relevant. Second, public sector is a major customer to the institute sector. Hence, access to professional knowledge environments may be an important driving force for renewal and innovation in the public sector.

Our survey has several targets. First we want to map the extent that public sector commission projects from the institute sector. Second, we want to investigate if different parts of the public sector utilises the institute sector in different ways. And third we want to look into how academic and consulting may constitute mutual benefits for both the institutes themselves and their customers as well.

### 4.1 Norwegian Agricultural Economics Research Institute

#### 4.1.1 Facts and figures

The Norwegian Agricultural Economics Research Institute (NILF) was established in 1986. NILF's stated objective is to be a recognised and user oriented research and competence centre of high standard, to contribute to a high level of knowledge in society and a solid decision-making basis for its customers through a combination of research, studies, documentation and consultancy about economic conditions in agriculture, industry associated with agriculture and the food sector.

NILF's present research comprises international and national agricultural policy, the food sector and market, industrial and enterprise economics and regional development.

NILF is a government agency with special credentials, subordinated to the Ministry of Agriculture and Food.

The budget for 2005 amounted to NOK 42 million, stemming from the Ministry of Agriculture and Food, the Research Council of Norway and contracts with other parties. NILF's total number of employees in 2005 was 68. In 2004, the total number of man-years produced was 62, and the number of man-years produced by researchers and other professional personnel was 42.

#### **4.1.2 Funding and Customers**

In 2004, the total income for NILF was NOK 40.4 million, where NOK 28 million (69 percent) are general grants and NOK 12.4 million (31 percent) are income from assignments.

Of the general grants, NOK 4.8 million was a base grant, NOK 3.8 million was granted via strategic institute programs and NOK 19.4 million was other general grants.

Of the income from assignments, the greatest share was funded by the Research Council of Norway, NOK 4.8 million. NOK 3 million was funded by the civil service, NOK 1.7 million by the private sector, projects totalling NOK 0.7 million had foreign funding. A category branded "Others", funded projects summing up to NOK 2 million.

### **4.2 The Norwegian Institute for Cultural Heritage Research**

#### **4.2.1 Facts and figures**

The Norwegian Institute for Cultural Heritage Research (NIKU) is an accredited, autonomous body of expertise dedicated to the preservation of cultural heritage and its vitality as a resource. NIKU is a member of ENVIRA, the Environmental Research Alliance of Norway.

NIKU's new organisation, which came into being on October 1st. 2003, comprises five groupings of specialists. Representing specific activity areas in the field of cultural heritage, these *competence groups* will provide overall solutions and sound advice for heritage management and planning by government bodies, local authorities and private clients. Furthermore, the formation of these groups aims at maintaining and expanding its expertise within the various areas of activity, which are: Archaeological, Art and artefacts, Buildings and settings, Environmental monitoring and Spatial planning.

NIKU has about 70 employees, mainly researchers and conservators. The number of man-years produced was 62, of which 42 was produced by researchers and other professional personnel. The turnover in 2004 was NOK 53.4 million.

## **4.2.2 Funding and customers**

In 2004, the total income for NIKU was NOK 53.4 million, where NOK 12.1 million (23 percent are general grants) and NOK 41.4 million (77 percent) are income from assignments.

Of the general grants, NOK 5.2 million was a base grant, NOK 6.8 million was granted via strategic institute programs and NOK 0.1 million was other general grants.

Of the income from assignments, only NOK 0.6 million was commissions from the Research Council of Norway. NOK 10.5 million was funded by the civil service, NOK 29.7 million by the private sector, projects totalling NOK 0.5 million had foreign funding.

## **4.3 Norwegian Institute for Urban and Regional Research**

### **4.3.1 Facts and figures**

Norwegian Institute for Urban and Regional Research (NIBR) is an interdisciplinary social science centre for urban and regional research. The Institute is charged with a national duty to conduct environmental research and works internationally on urban and regional research from an environmental and developmental perspective.

Within an urban and regional research framework NIBR studies and reports on the following sectors: public administration, governance and democracy; welfare, health and living conditions; planning, land use and urban development; regional development, business environments and demography; and environmental and development issues.

The number of man-years produced in 2004 was 66, of which 54 were produced by researchers and other professional personnel. NIBR's total operating income in 2004 was NOK 57.5 million.

### **4.3.2 Funding and customers**

In 2004, the total income for NIBR was NOK 57.5 million, where NOK 10.4 million (18 percent) are general grants and NOK 47.1 million (82 percent) are income from assignments.

Of the general grants, NOK 6.4 million was a base grant, NOK 4 million was granted via strategic institute programs.

Of the income from assignments, the commissions from the Research Council of Norway totalled NOK 16.9 million. NOK 24.3 million was funded by the civil service, NOK 1 million by the private sector, projects totalling NOK 4.4 million had foreign funding. A category branded "Others", funded projects summing up to NOK 0.5 million.

## 4.4 Research or...

The description of different sources of income given above is only to a minor extent suited to explain what activities the institutes are engaged in. From the interviews performed, we have identified four main categories of activities. These are

- civil service tasks delegated from a ministry to an institute
- consultancy tasks and other commercial activities
- development tasks
- academic research.

The three institutes vary along these lines. The case studies thus illustrate the heterogeneity in what in Norway is labelled the institute sector.

### 4.4.1 NILF

NILF states that around half of the total volume of activities are civil service tasks delegated from the Ministry of Agriculture and Food. The rest is divided between development tasks and research.

The civil service tasks are to a large extent specified by the Ministry, but a part of the amount allocated to civil service tasks are administered through a frame agreement meant to be used for development tasks. These tasks are not specified by the Ministry, this arrangement therefore gives NILF some slack regarding how to define the agenda within their sector.

NILF sees itself as closely connected with the Ministry. The relation between NILF and the Ministry has several aspects that provide a potential for innovations. When trying to define innovations in this relation, NILF sees it as important to understand the core business of the Ministry. The Norwegian Ministries have been through a process where they have concentrated on policy creation and policy implementation. If NILF can produce knowledge or insights that affect policy creation and/or policy implementation, they may have an innovative effect.

The main arenas for transferring knowledge and insights are the ongoing projects, dialog around the civil service tasks, and the social networks. Within the agricultural sector, many of the professionals will have experience from more of the central organisations. This may contribute to intensify the information flow, also between NILF and the Ministry.

The close connection between NILF and the Ministry also raises some other issues. NILF states that they feel a pressure towards the political day-to-day agenda. This draws attention to the civil service tasks and development activities at the expense of research activities. On the other hand, NILF should benefit from their research activities in performing the civil service tasks and development activities. NILF has to balance its research activities against being considered relevant by the Ministry and other organisations, which finance development activities.

NILF has increased its number of articles published in journals with peer review, from 9 in 2002 to 15 in both 2003 and 2004. Held up against the 42 man-years

produced by researchers and other professional staff, NILF may be considered as an organisation that has a large amount of activities besides research.

#### **4.4.2 NIKU**

Of the three institutes, NIKU has by far the largest share of consultancy and other commercial activities. NIKU is a major provider of preservation services and conservation expertise. The institute assesses treatments to buildings and artefacts performed earlier, it suggests treatments, it helps in producing applications for funding support and it performs various treatments. NIKU is also engaged in spatial planning and impact assessments.

NIKU sees some challenges as to how to draw distinct borders between research and development activities. Some may see projects dominated by documentation as research, while others may see documentation as a base for further research, but not necessary research in itself. NIKU has been through a process from having a fair amount of pure research to being an independent knowledge centre. This process has led to NIKU being an organisation that has a wide range of activities, without research as the only dominating activity.

NIKU receives each year a letter of allocation from the Ministry of the Environment. In this letter, the institute is informed about the size of the base grant, and is presented with the Ministry's priorities for the coming year. NIKU management representatives meet with the Ministry to further develop the discussions on priorities and performance.

The Directorate for Cultural Heritage is a major contributor in the field of conservation and preservation. NIKU has important, but also challenging, relations with this directorate. To some extent, the two bodies have overlapping competencies.

When the local municipalities commission NIKU, the normal situation is that NIKU delivers some competency the municipalities do not hold. NIKU often experiences that there is a close link between NIKU deliveries and innovations/changes with the municipalities.

NIKU experienced a decrease its number of articles published in journals with peer review, from 8 in 2002 to 4 in 2003 further down to 2 in 2004. The number of this kind of journals are very limited within NIKU's field of operation. NIKU produced 42 man-years from researchers and other professional personnel.

#### **4.4.3 NIBR**

With NIBR, we interviewed the acting manager of one of the four research groups. The information may to some extent be coloured by this group, but the ambition has been to cover the institute as such.

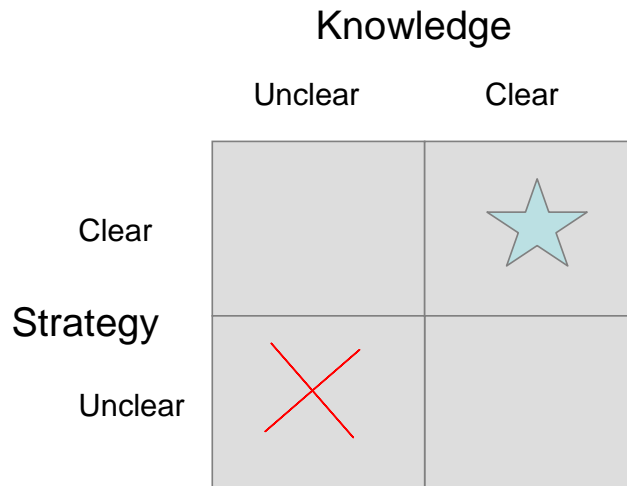
NIBR's profile is research oriented. Both from the interview, from NIBR's annual report and from NIBR's home page, we learn that research is dominant among the institute's activities.

Some of the projects performed fall within the development category (development in this sense meant as opposed to research, not as in e.g. regional develop-

ment). When NIBR performs development projects, the institute does this based on research activities within the same field. The research provides a foundation for the development activities, which again may lead to innovations or changes with the commissioner.

In a discussion on how/whether NIBR-projects contributes to innovations, the dimensions strategy and knowledge was presented.

Figure 4.1 Knowledge and Strategy



The best cases for contributing to actual innovations are of course where the research presents clear knowledge, and the responsible authorities have a clear strategy for how to use this knowledge. On the other end of the scale, we find the cases with unclear knowledge and unclear strategies. A challenging situation arises, when the research presents clear knowledge, but the strategies are unclear.

NIBR published 13 articles published in journals with peer review in 2002. In 2003 and 2004 the numbers were 11 and 20. With it's 54 man-years produced by researchers and other professional personnel, it becomes clear that NIBR is engaged in research that not always leads to publication in international research journals.

NIBR expressed some concern about an increased emphasis on publishing their academic research in scientific journals. The pressure is among others created through the research financing system. One unintended result of this, is that it creates an obstacle when it comes to making research findings available for the general public. Hence, too much weight on producing articles may weaken an important opportunity for communication between the public sector and professionals in the institute sector.

## 4.5 General insights

The institutes that we have interviewed agree that there is a significant difference between funds through Norwegian Research Council (NRC) and other financial resources. From a broad perspective, the amount of grants through NRC plus strategic institute programs and base grants may constitute a proxy on the amount

of academic research in the institute sector, while financing from other sources will mainly proxy the amount of consulting and development tasks. NIBR suggest that there will be some bias in this “accounting” method. The reason is that large development projects may require some academic research and will hence give opportunities for submitting articles to journals afterwards. This means that it is primarily the smaller consulting and development projects that capitalise on existing research based knowledge.

All of the institutes indicated that academic research on the one hand and development and consulting projects on the other may be of mutual benefit to each other. All institutes claimed that development and consulting tasks is performed by professional staff. I.e. the institutes have not established internal organisational solutions that prevents that the academic research is available for development and consulting assignments.

All of the institutes have also indicated that the relationship with commissioners is decentralised and is taken care of by most of the professional staff. This is important to enable that knowledge is transferred both through formal mechanisms (e.g. written reports) and through more informal networks (e.g. through meetings and personal relationships). More informal networking may play an essential role in public sector renewal, especially with respect to development of new ideas and to ensure exchange of experiences between different parts of public sector and internationally.

In the dialogue with the ministries, creation of knowledge by the institutes can improve policy making and policy implementation. This may be labelled “political value added”. As shown in Figure 4.1, this process is easiest when the knowledge produced is clear, and the thoughts on what to do with the knowledge are the same. However, politicians have to make and implement policies also in areas where the knowledge is not clear, and they sometimes consider other aspects than the relevant research based knowledge when prioritising between alternatives. Thus, the research institutes may produce clear and relevant knowledge, but the effect on policy making and implementation depends also on how the political environment receives the knowledge.

## **4.6 Further research**

Within the Norwegian institute sector, we have found examples of institutes performing relatively large portions of their activities under labels other than research. The links between these different activities vary, and it could therefore be worth some further investigation how strong the interdependence between research and other activities really is.

Another question that might be relevant for further studies, is whether the institutes and the users of their research consider the results as clear, and whether the strategies for using the new knowledge is clear. This may contribute to explaining to how knowledge produced by the institutes is linked to innovations.