

ESERCITO

PREPARING
TOGETHER
FOR THE
CHALLENGES
OF TOMORROW







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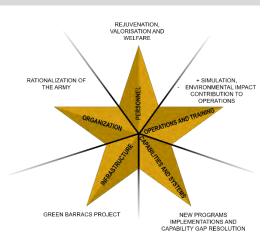
PREFACE



With this document, created by the III Department of the General Staff of the Army, I intend to share an update on the current state of the army and future developments.

This brief discussion is not intended to be an exhaustive description of the complex topics covered and the numerous initiatives underway. However I hope it will allow us to share the idea of what are the challenges and how we are preparing to prevail against them.

As it will emerge while reading this document, in the near future scenarios all domains, including cyber, will be intrinsically connected and the units, down to the lowest levels, will operate by autonomously managing multi-domain, joint and combined assets. These are challenging conditions both for the junior leaders on the ground and for the headquarters that will have to act with forces widely dispersed in complex, fragmented and rapidly evolving spaces.



PERSONNEL **NRGANI7ATINN** OPERATIONS AND TRAINING CAPABILITIES AND SYSTEMS INFRASTRUCTURE

From this perspective, in line with the missions entrusted to the 5 CHALLENGES/OPPORTUNITIES Defence, the Italian Army must be a versatile, interoperable, resilient force, in possession of appropriate capabilities to intervene at all levels, from high intensity war fighting to stabilization scenarios. This must be done without forgetting homeland security operations or activity in support to civil authorities.

> These are wide-ranging objectives that we are already addressing day by day through numerous activities within the framework of the 5 identified challenges/opportunities of the Italian Army (personnel, organization, operations and training, skills and systems and infrastructure). They represent a programmatic and structured approach towards the path we are taking.

> A modernization that must necessarily involve the creation of a National Integrated Force involving the entire defence sector, the national system and a close synergy with the world of industry and research.

> From this perspective, a long-term, feasible and pragmatic financial planning is a fundamental condition to conduct those necessary and urgent interventions that will allow us to modernize and renew current weapon systems and platforms to overcome the generation gap accumulated through years of reduced funding. This will achieve an effective balance between the various Armed Forces.

> The human component is, and will continue to be, our primary strength. Capable, professional and specialised men and women, who can rely on a unique cohesion based on foundations underpinned by solid values that define our identity of Italian soldiers.

> Only by following this process the Army will be able to continue to operate successfully, ensuring the security of the country, amongst the people and for the people, ready to respond, in whatever circumstances, to the new tasks it will be called to perform.

> > THE CHIEF OF STAFF OF THE ITALIAN ARMY GEN. C.A. SALVATORE FARINA

INTRODUCTION



The international instability is characterized by a growing level of uncertainty and by the presence of multi-dimensional and multi-form threats. The question of perceived security is therefore extraordinarily relevant and is one of the main national priorities.

In such a context, the Army is "on the front line" today more than ever, providing the country with a land component characterised by elevated operational readiness and versatility of employment and able to effectively operate in both international and domestic missions.

Over the last few years, alongside the multi-year commitments for the maintenance international peace and security. Army interventions in support of the domestic population have increased considerably following national disasters and incidents. The same happened to the effort in support of police forces in countering crime and preventing possible terrorist attacks.

For this reason the Army has consistently emphasised the need to conduct a process of transformation, in order to be able to effectively carry out its missions assigned by law and to guarantee maximum security to its own personnel. The process should be focused on the urgent needs linked to the sudden evolution of the threat in operational theatres (the so called "transforming while operating") and to those resulting from changes to the scenario of reference (for example NATO's renewed attention to collective defence and importance given, primarily from Italy, to the southern flank of the Alliance).

With reference to the modernization and renewal of the vehicles, materiel and weapon systems, the aforementioned process of transformation has only partially achieved the desired effects.

This is primarily due to the unfavourable economic situation within the country. This, caused a substantial reduction in the financial resources available to the "defence function", while the Ministry (and therefore the armed forces) has not been able to rely upon certain,

predefined levels of funding to plan and consolidate the development of the Army.

In fact, the financial uncertainty has often pushed the Army to opt for difficult choices, including underfinancing or freezing of important programs, lengthening the acquisitions plans or delaying the modernization of entire lines of operation.

In such a context, the depth of the Army distress can't be underestimated. It will be difficult to sustainthis trend, as it has direct implications on the Army'slevel of efficiency, which is now increasingly dependent on the financing derived from specific tasks (Overseas operations, Operation "Strade sicure", etc.).



In practice this is a matter of considering the development of the Army as a multi-level process, conducted not only on the national level but also in parallel within NATO and the EU: it is connected to the equitable sharing of efforts towards collective security, the time needed to achieve the objectives and the quality/quantity of resources invested are constantly monitored using objective criteria.

Within the Atlantic Alliance in particular, the declaration made in Wales in 2014 (recently confirmed at the Brussels summit) explicitly identifies 2% of GDP as the desired level of military spending of member countries. However, according to the NATO criteria Italy now stands at 1.15%.

THE FRAMEWORK OF GEOSTRATEGIC REFERENCE



For the purposes of national security, the stability of the following areas is considered essential:

- The EURO-MEDITERRANEAN REGION, a geopolitical area that includes Europe, the Balkans, the Black Sea, the middle-eastern Mediterranean and the Maghreb;
- The EURO-ATLANTIC REGION, an area of fundamental interest that encompasses the member states of the Atlantic Alliance.

From a national perspective, it is therefore not possible to separate the security of the two regions due to the fact that they are both complimentary pillars which are essential to the defence and security of Italy. Their superimposition allows the identification of two large areas of instability:

THE **AREA** OF **WESTERN** CRISIS. characterized by the assertive foreign policy of the Russian Federation. This is felt as a potential conventional/hybrid threat particularly by the allies who are geographically the closest. In this sense, the tendency, which will surely continue in the years to come and beyond 2025, will be to carry out measures of deterrence and defence, through an enduring process of capability and structural adjustment of NATO. The particularly unstable region of the Middle East and more generally the Persian Gulf also fall in this area.

THE SOUTHERN AREA OF CRISIS. characterized by a widespread circle of instability that is sharpening the security challenges faced by Europe and the Atlantic Alliance. There is a negative trend fuelled by a number of factors, including: the presence of fragile or absent state entities and governments, weak economic development, climate change, demographic imbalances, violent extremism, including terrorism, and criminal activity. All this creates fertile terrain for both state and non-state actors that use violent force, terrorism and/or crime and contributes to the migrant crisis affecting Europe and wide spread instability in the surrounding area.



The future challenges are also expressions of the growing strategic competition between powers at both regional and global level (above all in Asia, the Middle East and Africa). A dynamic that encourages the acquisition of a technological and military advantage, significantly increasing the risk of crisis and conflicts.

However, one must highlight the fact that potential adversaries will not necessarily aim to be stronger and technologically superior but may aim to weaken a competitor until they become equal.

It is essential to understand the strategic philosophy behind it, which requires an



extensive use of an indirect approach to exploit every possible weakness at a physical, moral and conceptual level, through the combined use of both military and non-military means.

This is a complex and comprehensive strategic challenge that manifests itself in the military field through a combination of multiple adversaries, in multiple geographic areas, often simultaneously, in all the operational domains as well as the information space.

In such a context, the **cyber threat** has shown itself to be capable of causing substantial damage and is assuming a growing relevance due to the reliance of advanced countries on information technology.

Cyberspace is destined to be the primary enabling factor of adversaries that are willing to conduct asymmetric, hybrid or criminal action as well a place where violent extremism can be promoted.

Equally the possibility for a wide range of users to access advanced technology has equipped potential adversaries with easily available instruments with which they can carry out illegal acts.

For example, the rapid spread of the use of drones and mini drones that, while being useful in many activities in the civilian sector, also constitute an ever greater threat to security.

Last but not least, we must remain ready to confront eventual strategic upheavals that can involve member states of the Alliance in various forms (economic crisis, natural disasters, terrorist attacks on a large scale etc).

Keeping this in mind, such dynamics often can also become opportunities to consolidate relationships and partnerships contributing to stability and security. In such a scenario, the **land component** will be effective only if it maintains the necessary flexibility to operate across the entire spectrum of conflict and in all environments. The ability to counteract multi-domain activity and manoeuvre without restrictions will depend greatly upon the balance between a credible capability of defence and deterrence and that of united cooperative security and crisis management, whilst maintaining a 360-degree capacity and remaining technologically competitive.

In the wider framework of international law and in full respect of constitutional principles, it is indispensable to have an operational power/capability that assures:

- a robust capability to deter, tailored to prevent conflicts and to protect the Alliance and its members. This requirement is based on the availability of adequate force levels and sufficient resources to enable a swift response to a wide variety of crises;
- a defence capability, even in high-intensity conflict, against conventional and hybrid threats, also with the purpose to safeguard the integrity of the Alliance in every possible domain;
- an increased security in the areas bordering the Alliance, provided through: the effective capacity to respond to crises and a sound ability to manage/contain their effects (Crisis Response); an adequate protection of security in the "wider neighbourhood" of the Alliance (through



activities such as the development of partnerships and Defence Capacity Building; measures of defence and deterrence aimed at widening NATO's capability basket (such as the Readiness Initiative).

The examination of the strategic environment cannot neglect the wider range of emergencies that, in recent years, have required a growing amount of military support to civil authorities within national borders. This aspect applies not only to the national sphere but also to the wider concept of Resilience (i.e. of the reactive capability of the apparatus of the State to confront disasters, emergencies and crises on a large scale) becoming one of the essential elements of Collective Defence (a subject discussed during the last NATO summit in 2018 in Brussels).

It is also clear that, in a wider security and defence context, the missions given to Defence are integrated with the objectives of the two main organisations, NATO and the European Union. In this sense, our country actively contributes¹ to various initiatives in the areas of: Collective defence, Crisis management and Cooperative Security (NATO Core Tasks).

Italy promotes many initiatives to orient and reinforce the role of the Alliance in the Mediterranean and the Middle East¹ in order to systematically confront the endless crises and ongoing instability as well as the threat of terrorism and violent extremism in such areas. Specifically, these requests have been implemented by NATO with the approval of the "Framework for the South" and the creation of a regional Hub for the South located with Joint Force Command (JFC) in Naples.

Furthermore, attention to the cited three tasks has lead the Alliance to identify strategic characteristics that armed forces of member states will need to satisfy: being **credible**, **networked**, **aware**, **resilient**, **agile**, while including the capability to integrate themselves, in a structured and standardised manner, with non-military components in Non-Combat operations and in support of the local population.

In order to be able to carry out such tasks, it is essential that NATO maintains the technological superiority, through the military instruments of member States, because, today more than ever, the acceleration of scientific developments renders weapon systems and platforms, and as a consequence also the decision making process and the related procedures, rapidly obsolete.

It is therefore fundamental to have a consolidated long-term investment plan which will allow the maintenance of technological competitiveness and the maintenance of a ready, capable and credible land component.





FUTURE CHARACTER OF CONFLICTS



The strong international dynamism and the complex socio-political dynamics will certainly characterize the years to come. Alongside this, the future will be increasingly influenced by other factors that will be the cause of a widespread perception of instability.

These elements are connected to phenomena of time and also linked to human (demographics, migration, urbanization), economic (global economic crisis, competition for resources), environmental (climate change, natural disasters and emergencies) and technological (dependence on technology and information networks, cyberspace and the pervasiveness of information) aspects. These combine to favour the continued and inexorable process of integration and globalization, contributing, in Western societies, to the accumulation of further elements of uncertainty.

Future scenarios, and consequently, the future operations will be characterized by the indeterminate nature of the threat and so the spectrum of possible types of conflict the Army could be involved in will be wider than ever.

The military will have to be prepared to confront irregular forces, with persistent conventional threats alongside threats which will become more and more hybrid in nature.

The complexity of the future operating environment will be further exacerbated by the fact that conflicts will conceivably develop in many environments and domains (land, air, sea, electromagnetic, Cyber, information and space) simultaneously and concurrently connected.

The aim will be to produce effects on the cognitive, moral and physical components through the combined and calculated use of political, diplomatic, economic and information activities while resorting to military action only as a secondary measure.

Numerous risk factors and global trends of various natures will affect the operating environment. A future war will likely have the following characteristics:

BATTLESPACE INCREASINGLY CONGESTED

The progressive urbanization and globalization will lead to a substantial increase in built up areas and the population density in many of the areas of potential military intervention. Therefore, the future battlefield will presumably be a urban area and will have a large presence of civilian personnel (fighting amongst the people). The freedom of manoeuvre of the land component will be heavily restricted.

INCREASINGLY CONFUSED AREAS

The battlespace will generally be crowded with combatants (legitimate and illegitimate), non-combatants (local populations, NGO workers, journalists) and other subjects whose attitudes will increasingly harder prove to understand. This will make the identification of the threat more complicated and the ability to engage objectives in a discriminate manner more challenging.

INCREASINGLY CONTESTED SECTORS

The widespread availability of low-cost technology for military uses has allowed most of our potential adversaries to severely limit our freedom of access to areas of manoeuvre. Anti-area weapons, anti-ship missiles. hiah power explosives, mines and unmanned vehicles already available on the market today will be accessible even to nonstate actors with limited financial resources. The land component will be confronted with significant difficulties while accessing operational areas both on land and from the sea or air. Furthermore, even the electromagnetic space will not be contested exclusively by states, but also by other actors (transnational organizations for example).

INCREASINGLY CONNECTED REGIONS

The acceleration of globalisation will lead to greater and more intricate flow of people, materials and information. Compared to the past, the cost of transport will decrease, and borders will be increasingly permeable with a corresponding increase in global lines of communication. Therefore, movement control and protection of critical infrastructure such as ports, stations, road junctions, airports etc will be more complex. Furthermore, the evergreater presence of global media in crisis areas and the ease of access to the internet will make the spread of information on a global scale even more immediate. This will also complicate the management of operations from a public information perspective.

CONSTRAINTS ON THE USE OF FORCE

Legal, moral and political restrictions aimed at the limitation of the use of force and at minimizing collateral damage will impose a significant reduction on the commander's ability to exploit all available resources at all levels of command. This will result in the necessity to integrate legal experts at all staff levels and to dedicate more resources to intelligence and the targeting process.

GREATER PRECISION, FIREPOWER AND SURVEILLANCE CAPABILITY ON THE BATTLEFIELD

The rapid spread of increasingly more powerful and precise land weapons, with greater range compared to those of the past combined with a greater availability of effective surveillance systems, imposes the need to adopt adequate countermeasures and specific forms of manoeuvre. It will become very difficult to hide oneself from enemy observation and to escape engagement by enemy's direct and indirect weapon systems. The range, precision and fire power of artillery as well as combat vehicles anti-armour weapons. improved exponentially in recent years and will radically change the battlefield.







GROWING VULNERABILITY TO CYBER-ATTACKS
The emerging threats in cyberspace (which vary from espionage to real attacks with the aim of inhibiting, altering and destroying data, hardware, networks or eventual services and systems which are connected to them) will contribute more and more effectively to the efforts aimed at hindering the land component's freedom of manoeuvre, even at a low level of command.

TECHNOLOGICAL DEPENDENCE AND CONTROL OF SPACE

The new millennium is already characterized by a strong technological dependence on phenomena connected to digitalization and the requirement to be constantly connected and interconnected. The need for systems that are able to shorten the communicative distances and have the ability to analyze a large quantity of data in a short time frame, will enable extreme technology that will act in the cognitive and moral domain of the human component. Contemporary dependence telecommunications and satellite navigation and land observation only represents a part of what "spatial positioning" will become in the future. It will continue to be an absolute priority, not only for purely civilian goals but also for specific military needs, given the fact that the capability to control orbital systems will ensure a net advantage upon eventual competitors.

As much as the technological developments will become increasingly disruptive, it is believed that, in the years to come, the soldier will continue to be the central element on the battlefield. The use of robots equipped with artificial intelligence, able to take decisions autonomously but with the possibility of making errors will create an ethical dilemma.

The employment of autonomous systems is today stringently regulated by laws. However this does not preclude in the coming years, such systems being used in other ways, for example for reconnaissance and logistic support purposes in areas of operations.



Future Land power (the overall capacity of a nation's armed forces to conduct and influence activities towards, through and inside the land domain, in order to protect their own interests and pursuing their assigned objectives) will have to adapt to the narrative imposed by the future operating environment.

In accordance with the "Future Operating Environment 2035", (which envisages the enduring need for the Army to conduct multidomain operations) the Army will have to adapt and seek the best solutions not only to operate in an environment characterized by its multidomain nature but also by the constrains/opportunities of integration and interoperability, in the wider framework of the National Integrated Force.

The armies of the future will have to confront various evolving challenges where concepts of the recent past will be systematically overturned and replaced: the concept of "mass" will be replaced by the "selectivity of action", the control of public opinion and the effects strategy will be main topics of tactical publications, the use of autonomous and

robotic components in support of tactical manoeuvre units will become ordinary.

The improvement of armoured platforms in terms of protection, mobility and fire accuracy will be of particular importance with emphasis on active protection systems. Equally, the use of more selective criteria to control the volume of fire from armoured platforms, in close coordination with light infantry units characterized by strong spatial decentralization, will prove indispensable to generate decisive action.

The land component will change, modernizing the current Army operational functions which, in the post-2035 era, will need to be able to support forms of manoeuvre characterized by the integration of assets according to the principle of Multi domain operations within a multi-level environment.

In such an environment lethal effects and nonlethal actions will be reported, and therefore have consequences, in real time (given the interconnectivity of global communication systems).



Furthermore, the dense urban terrain characterized by its littoral elements will compress physical and temporal spaces. This will create obstacles requiring simultaneous execution of activities meaning the space for manoeuvre will be constricted but the rhythm and complexity of tactical tasks will increase.

The principle of mission command will become even more important, together with agile leadership. It is a fundamental requirement to be able to manoeuvre assets and, at the same time, enhance situational awareness within an operational area.

Underground, disruptive activities, influence, robotic autonomous systems, big data, employment of non-lethal weapons and the use of the extra-terrestrial dimension, will be the most used terms in the coming 30 years.

The latest analyses predict that the complex environments in which the land component will find itself operating will pose a great challenge when competition with an eventual competitor falls below the threshold of direct conflict, due to the use of techniques and procedures typical

of a hybrid threat including its media and information narrative.

For this reason the land component will need to continue to concentrate on complex manoeuvre within multi domain operations, as this will be the only tool capable of effectively penetrating the adversaries' anti-access systems.

The adversaries' physical and cognitive systems in the abovementioned operational context will not change the principles of understanding, manoeuvre, direct and indirect fire and protection that will have to be applied to achieve success.

THE MISSIONS OF THE ARMED FORCES



MISSION ASSIGNED TO DEFENCE



HOMELAND DEFENCE

It is the most distinctive task of the land Component and also the most taxing upon it, aside from any consideration about the probability the threat connected to such a scenario (that implies the intervention on a large scale of conventional forces) actually manifest itself.



DEFENCE OF THE EURO-ATLANTIC AND EURO-MEDITERRANEAN AREAS

Italy contributes to collective defence operations of the Atlantic alliance [art. 5 of the NATO treaty] and to operations aimed at the stabilization of the areas around the Mediterranean basin with the ultimate objective of protecting vital national interests and strategies.



CONTRIBUTION TOWARDS INTERNATIONAL PEACE AND SECURITY

This also includes participation in operations outside of the areas identified as a priority, for the prevention and management of crises in order to maintain peace and security, international stability and legality as well as safeguard the fundamental human rights.



SUPPORT TO LOCAL AUTHORITIES AND DISASTER RELIEF

Activity carried out by the Army to protect free institutions and specific tasks in case of national emergencies and other cases of extraordinary need and urgency.

In such a framework, the Army is called upon to adequately prepare and equip itself, whilst maintaining a suitable level of readiness to carry out both the roles assigned by the government and international tasks.

Therefore, the Army must have the capability to project forces, maintain command and control of operations, versatility and interoperability to act at a joint level within a digital environment.

The land component, built on the combined arms digitized brigade, other than guaranteeing the fundamental requirement of deterrence at the national defence level (first mission), will have to be able to confront crisis situations in the wider spectrum of conflict: from extended and direct control in crisis situations of a medium to low intensity to the conduct of combat operations (second and third missions).

Further efforts will be necessary to enable the land component to conduct capacity building activities in support of foreign security forces of unstable countries.

The land component will always need to be ready to assist the other state institutions, particularly with regard to Homeland Security and in case of national emergencies (fourth mission)¹. The threat of widespread, pervasive, decentralized terrorism over ten years ago prompted the launch of operation "Strade Sicure": today 7000 military personnel are deployed to control the territory and prevent terrorism.

The surge in fundamentalist Islamic terrorism has highlighted the need for an integrated response and a greater interaction between the internal and external security structures of the nation, i.e. between Armed Forces and Police Forces.

The Army was able to adapt means and materials already available, but this use caused their progressive degradation, exacerbated by their use in urban areas, an environmental and operational context far different from the ones they were originally meant for. Furthermore, the Army, much like the other Armed Forces, is institutionally employed in support of other institution external to the Ministry of Defence, to aid in the event of national disasters and public need2. The Army has historically retained a capacity to adapt, enabling it to provide a contribution to the national response to public emergencies, demonstrating high resilience and the intrinsically flexible nature of organization. The Army has:

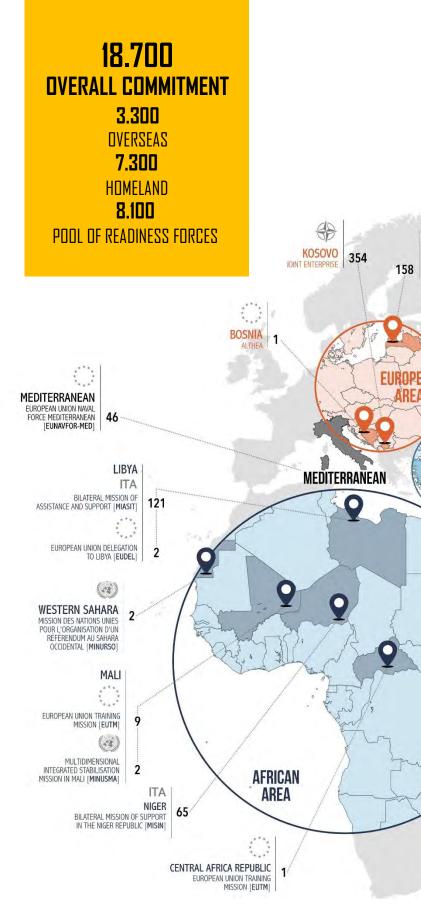
- a structure spread across Italy, composed of Commands (Operational, Logistic, infrastructural and territorial), permanently connected to each other and able to intervene at short notice;
- The capability to immediately deploy to extend/adapt a robust and flexible network of communication through the use of satellites, radio bridges and military radios;

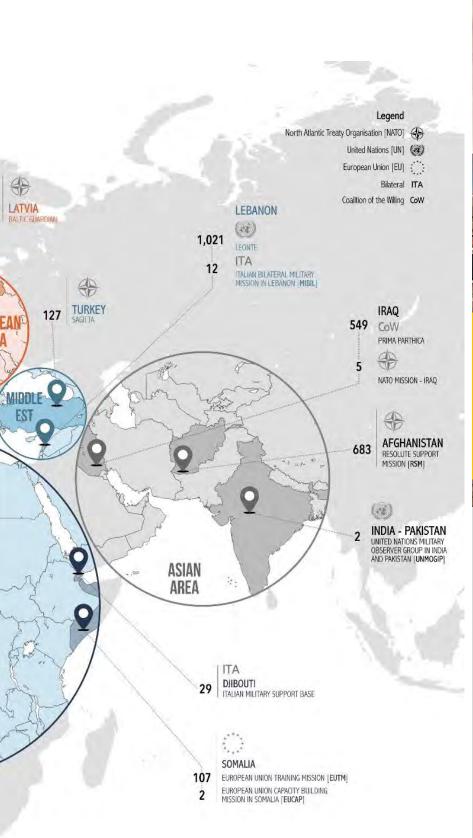
- army aviation units (AVES) and military engineers geographically evenly distribuited and able to provide support to transport and reconnaissance activities (also with instrumental flight at night and in challenging weather conditions) and rapidly carry out rescue operations when natural disasters occur.
- specialized logistical support units dedicated to significant transport capabilities, to preparing and managing camps, providing sanitary support, provisioning, accommodation and the distribution of water and fuel.

The Army can therefore contribute to safeguarding the country's essential functions in order to ensure:

- continuity of government, including through the provision of infrastructure and dedicated C4I systems³;
- protection of critical infrastructures from possible threats;
- **provision** of essential services (food, water, health service, etc.);
- continuous availability of energy through the provision of energy generation systems and the use of national strategic resources and the repairment of transport networks;
- **Evacuation** of civilians in the event of natural disasters (also as a contribution to define evacuation plans for which the Civil Defense is responsible).

We can therefore confirm that Italy has a resilient land component. However it must be maintained through an adequate and coherent policy of modernisation and renewal, otherwise we risk the loss of the aforementioned capacity.







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NOTE

- Activity carried out primarily for nonmilitary objectives mainly in support of the population (national and foreign), such as that indicated by the political authority in art 92 of the military code of regulations 66 2010.
- Including all those activities, vehicles and materials given to organizations external to the Ministry of Defence in the event of demonstrations and celebrations of a patriotic, sporting or social nature.
- 3. Command, Control, Communication, Computer e Information.

THE MAN AT THE CENTRE



People are the fulcrum of the entire Army system. A ready, versatile and operationally effective Force is based upon men, women and leaders of units of various levels who are aware of their own role. They are able to act in any situation and have the capacity to assume challenging and complex responsibility, whilst evaluating the risks of their own actions and showing themselves prepared for the challenges that present themselves.

The Army must have ready, prepared and professionally motivated people who understand and display the values associated with military service. As well as displaying high professional standards it is equally important that soldiers retain high moral and ethical principles: to promote the military identity – discipline, moral integrity and esprit de corps – represents a fundamental objective for the Army on which to develop its own collective character.

In a high-tech world, man continues to be the primary actor within an institution in which cohesion, a sense of belonging and traditions still are extraordinary force multipliers.

Today, the soldier is increasingly a tool of mediation and conflict resolution: he is required to constantly interact with a multitude of different actors, including his fellow citizens, the local population of foreign countries in which he is called to operate, foreign militaries as well as the representatives of governmental and non-governmental organisations.

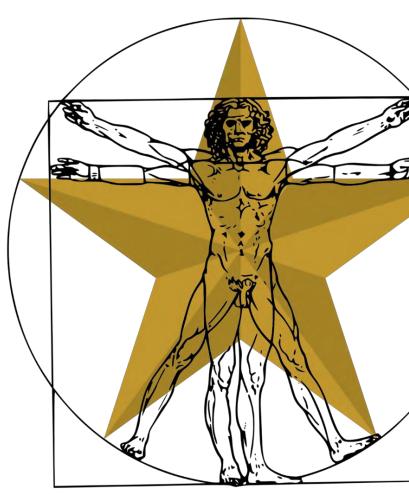
To contribute effectively to the prevention and stabilisation of crisis situations and to cooperate for security, the Army trains Commanders and soldiers able to co-ordinate complex activity and provide their own contribution, through the application of Mission Command.

This requires men and women who possess a deep understanding of their role and the objectives assigned to Defence. They must be equipped with the capacity to carry out tasks in complete autonomy if necessary.

Particular attention should be paid to the **training of Commanders at all levels**. The Commander deeply influences, through his personality and his actions, the potential of the entire unit.

In the field, the experience gained in the last twenty years shows us that the tactical commander must be able to effectively employ combined arms units, to integrate all the operations functions in order to develop its maximum combat power and to maintain the initiative and an advantage within the decision action cycle.

If these tasks were once assigned to high level commanders, Afghanistan, Iraq, Lebanon and the Balkans have encouraged the growth and training of Commanders at lower levels. They





are required to combine the use of sophisticated technology (UAVs, electronic warfare equipment, unmanned vehicles, target acquisition equipment, satellite communications equipment etc) with techniques and skills aimed at cultural mediation and engagement (interpersonal communication, local leader engagement, key leader engagement, female engagement).

The Commander must be able to rapidly gain awareness of the operational environment, displaying shrewdness and creativity to understand which tools to use to accomplish specific missions.

He must possess the ability to interact and relate to a vast range of actors and, in the meanwhile, understand the context in all its dimensions (but first and foremost in the human one).

In complex and uncertain scenarios this technical-professional preparation must be accompanied by strong motivation, self-discipline, moral courage and an appreciation

of the need to perform the managerial aspects of the profession by setting an example, inspiring passion, intellect and energy of his subordinates.

Another personnel issue matter that must be dealt with is the long process of transformation already underway within the Army. It envisages a reduction in size to 90,000 soldiers by 2024.

It is essential to guarantee the correct rebalancing within different areas of employment ensuring maximum consistency to the operational component and providing deployable units with "young" personnel.

The theme of the "rejuvenation" is only one of the challenges concerning personnel: it is closely linked to another factor, the opportunity to exploit the experience gained over time, primarily by older soldiers.

In this context, the Army General Staff has developed a study aimed at the implementation of a new recruitment system. By investing on a new model of Volunteer soldier to enlist for 3/6 years, it would guarantee a greater appeal to the military profession towars the new generations and an adequate return for the Armed Force in terms of "young" operational capability.

Improvement in career development in the Defence, adjustment of salary, precariousness reduction and introduction of specific policies to support the transition of staff soldiers, discharged without demerit, in other Administrations or in the private sector, represent the pillars of a project aimed at shaping an efficient Military Instrument, responding to operational needs and, at the same time, in line with the young people's expectations.

In the meantime strategies will be implemented to employ senior enlisted soldiers in roles currently carried out by non-commissioned officers, in special (units organizational elements) that will be made available to the public administration for tasks of civil support and emergencies, or, on a voluntary base, their transition to other government organizations.

The centrality of the individual can be achieved through the recognition of good work, meritocracy, transparency and participation, as well as through the exploitation of skills and experience. These become enabling factors in a healthy organization which is constantly improving.

The message that comes directly from the Chief of the Army shows the will to **develop effective internal communications** in order to inform all service members of the objectives reached and the tasks assigned to the various parts of the land component.

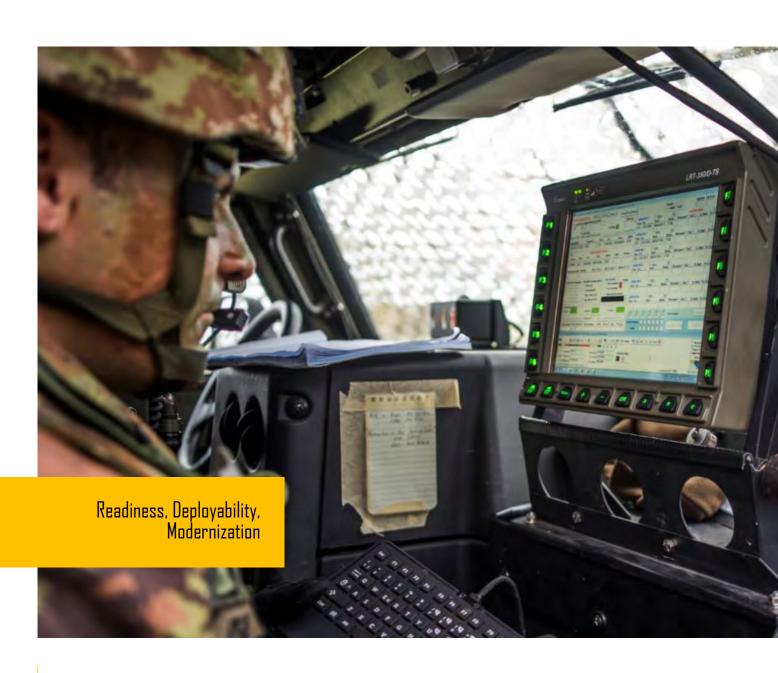
The initiatives put in place to enhance military service, specifically the well-being of personnel, deserve particular attention.

Much has been done to support families, protect family relationships, parenthood and to safeguard health.

This recognizes the important role a well-balanced private life plays in increasing operational effectiveness and is reflected in the composition of an Army that is constantly improving its efficiency thanks to each one of its components.



THE CAPABILITY SIZING OF THE ARMY



Few years ago the Italian Defence took the path of transformation that foresees the creation of an effective integrated national force.

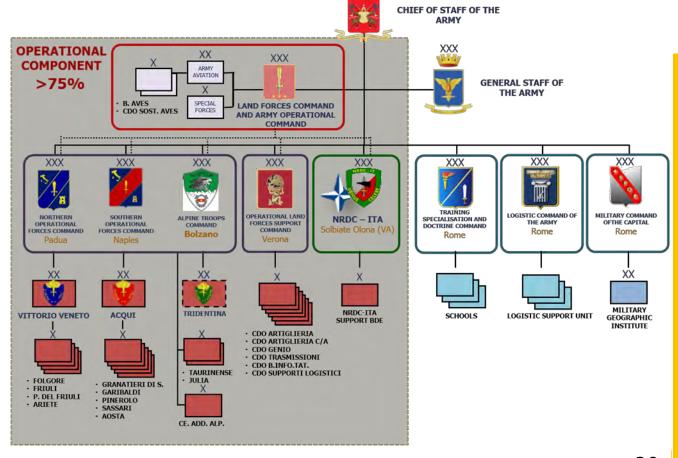
Through a focused rationalization of current structures and capacities, this will enable the successful conduct of missions and the unity of command. The result of such a process will be an Army that is:

- Well-sized and balanced in terms of quality, quantity and capability as well as able to guarantee national security and to protect national interests everywhere they are threatened through the mechanisms of prevention and deterrence as well as to intervene through force projection and support to the operational force;
- able to deploy modular, integrable and interoperable force packages both in national and international scenarios. These forces must be versatile to effectively provide varied, flexible and innovative responses to

- conflict situations including hybrid and counter terrorism activity;
- able to plan and conduct joint operations, even autonomously and at various levels of command;
- sustainable from a financial point of view both in terms of maintenance of effectiveness¹ and of capability renewal and development;
- that acts in a manner that is safe to human health, the environment and cultural heritage.

To achieve such a goal, it is necessary to ensure the current Army is operational and able to achieve its national and international tasks with the resources available.

Simultaneously, it must begin to conduct a rationalization of its capabilities whilst ensuring their constant and progressive modernization.



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In light of the factors already discussed, the process of reorganization must follow three principles:

- Readiness of the Force aimed at providing a rational distribution of commands and units across Italy and an employment of personnel that strenghtens the operational component;
- 2. **Deployability**, the ability to intervene and sustain, needed in order to be ready to carry out a wide range of tasks, in Italy and abroad also for extended periods of time;
- **3. Modernization**, following a sustainable plan of renewal and modernization while ensuring a varied portfolio of capability.

The capability dimensioning studies already conducted were to identify an operational model that is able to ensure the Nation's level of commitment can be achieved (simultaneous accomplishment of the Army's 1st, 2nd and 4th missions).

They were based on the variability of the assets requested and on the inevitable rotation of units and have highlighted the need for a land component focused on:

- 1 Corps Headquarters with associated support to deploy abroad with the capability to direct a Joint operation, including those of a high intensity, primarily in the land domain;
- 3 deployable Divisional Headquarters, able to provide command and control during the full spectrum of operations in contexts characterized by high, medium and low intensity;
- 10 digitized Combined Arms Brigades (heavy, medium and light), to direct an adequate number of deployable task forces at regimental level, which can be employed in operational situations of high, medium and low intensity, in contexts of hybrid warfare and also in missions of cooperative security.

Combined Arms Brigade is the core of the Army transformation process

UNITS	
CORPS COMMAND	1
DIVISION COMMAND	3
B.DE COMMAND + HQ lev. B.*	10+1
GENERAL SUPPORT COMMAND	7
MANOUVRE REGIMENT	30
RECCE REGIMENT	10
ARTILLERY REGIMENT	13
A/A ARTILLERY REGIMENT	3
ENGINEERING REGIMENT	13
TRANSMISSION REGIMENT	8

^{*} Brigade level HQ /Framework for multinational Brigade for projecting stability activities.

MANOUVRE	
MBT	257
IFV [COMBAT+C/C]	375
IFV enablers	304
CENTAURO	150
VBM recce	152
VBM [COMBAT+C/C]	400
VTMM	633
VTLM	3.623

FIRE SUPPORT	
SELF PROPELLED ARTILLERY	78
TOWEL ARTILLERY	150
MLSR ARTILLERY	21
A/A ARTILLERY	9 SZ

3 RD DIMENSION		
HEAVY TRANSPORT HELY	16	
TACTICAL TRANSPORT HELY	60	
ESCORT AND ESPLORATION HELY	48	
LIGHT HELY	50	



There will be also a **Brigade level HQ** primarily oriented to "projecting stability" activity;

- 1 EW-ISTAR² Component to direct activity conducted by its own means, sensors and systems in order to collect, analyse and distribute data and information to assist the decision-making process from the tactical to the operational level. A swift dissemination will be enabled to the Department for Information Security at the Ministry of Defence, which maintains the supervision and coordination of information collection at the strategic level;
- 1 Army Aviation Component, based on rotary wing aircrafts but also including fixed wing and RPAS³, for operations in the third dimension, to ensure, in particular:
 - > mobility and transport of forces in Theatre with heavy, medium and light assets:
 - > support to land manoeuvre through the provision of attack helicopters;
- Assets dedicated to operations support in conventional scenarios (Artilery, Engineers, C4, ISTAR, CIMIC⁴, CBRN⁵, PSYOPS⁶ at an operational and tactical level, as well as logistical support with protection commensurate to that of the manoeuvre force).

The Army must contribute to maintain a joint capability, ensuring:



A cyber defence component based on a department capable of deploying modular assets composed of highly specialised operators and equipment to support operations in the cybernetic domain:



An enhanced highly specialised **special forces component** able to conduct operations independently or in support of conventional forces, in any operational context. Such a component will be supported by specific land, naval and air assets to increase its operational effectiveness (eg CH-47, NH-90⁷, HH-101, FH-101, submarines, naval vessels, AC-27J Praetorian, etc.);



A CBRN Capability that contributes to the decision-making process through identification and survey of aggressions and risks, as well as through containment and decontamination, employing fixed automatic systems and unmanned platforms;



Capability in the INFO OPS sector⁸, including EW, CIMIC and PSYOPS components;



Tactical ballistic missile defence to track and engage ballistic missiles in the lower-tier segment and equipped with sensors to monitor the upper layer;



A joint amphibious force at high readiness, as the foundation of the national capability to project power from the sea, able to plan and conduct amphibious operations across the entire spectrum of conflict, focusing on the Euro-Mediterranean area.

It will be structured on two pillars, a naval-air unit and a landing force. The landing force will be composed of assets from the future joint Amphibious Brigade, including two manoeuvre regiments and adequate combat support and combat service support;



A Human Intelligence Capability (HUMINT)⁹ and Counter Improvised Explosive Device Capability (C-IED)¹⁰.

The combined arms Brigade is the focus of the process of transformation within the Army. It represents the primary planning unit and will be considered operational only when all of the platforms and families of platforms, specific to that type of Brigade, are available to its units (i.e. for a medium Brigade, VBM 8x8 family of vehicles in several configurations along with the VTMM command post family, ACRT and battlefield ambulance).

Therefore Brigades and regiments represent the absolute priority of the renewal and modernisation process (being conducted within the Army) because they ensure the operational output of the Army.

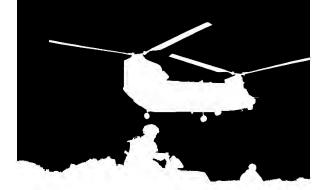
For this reason the Army has undertaken a capability review to support its capability portfolio and, at the same time, launch a deliberate renewal in those sectors that need to



be enhanced, according to the priorities of Defence. The dynamic nature of the current security situation is also being considered during this process. The principles of the Army transformation process are:

- **balance** in its composition between light, medium and heavy forces;
- equilibrium in its joint and combined nature;
- multinational and inter-disciplinary interoperability and joint integration: integration in particular will have to be directed to create compatible systems and procedures in order to obtain distinct defence capabilities and avoid duplication;
- · capability to engage effectively;
- an increase in force protection to guarantee an elevated standard of personnel protection (in terms of both security and safety):
- a strong expeditionary emphasis, to grant the availability of an agile, flexible, modular, rapidly deployable, structured force sustainable at great distance;
- the development of network-centred competences and structures to gain an advantage in that domain through the continuous, direct and adaptive exploitation of relevant information;
- design of families of systems, group of systems derived from a single main platform.

- 1. Including training and education activities.
- 2. Electronic Warfare Intelligence, Surveillance, Target Acquisition, Reconnaissance.
- 3. Remotely Piloted Aircraft System.
- 4. Civil Military Cooperation.
- 5. Chemical, Biological, Radiological and Nuclear.
- 6. Psychological Operations.
- 7. Both those of the Army and of the Navy.
- 8. Information Operations.
- 9. Intelligence activity consisting in gathering information through interpersonal contacts.
- 10. Activities aimed at facing improvised explosive devices.



CAPABILITIES AND SYSTEMS: THE DEVELOPMENTAL REQUIREMENTS OF A MODERN LAND COMPONENT.



To ensure it operates effectively, Defence must create an instrument that is extremely well **balanced among its components**, knowing that a misalignment could compromise the output of the entire system. Unfortunately, the financial and economic crisis that has affected the country in recent years has shaped the Italian defence budget, limiting the amount of investment for the Army¹.

The allocated finances are insufficient to satisfy both the logistical support demands of the current platforms (legacy) and the need to modernise. In such an environment, the Army, while conducting a deep process of internal review and technology research and development identified by the "Forza NEC²" programme (with the aim of allowing a harmonius and balanced development of all its components), started a reassessment of what to fund and how to fund it.

The obsolescence and ageing of main platforms and the descending critical issues are surely some of the principle factors shaping the process of modernisation and renewal.

In the next ten years a high number of systems will reach the end of their service life, also because of the particular wear they are subjected to.

It is therefore **essential to replace or upgrade these systems**. Should the Army's plans not be implemented in the desired time frame, the technological gap (and therefore performance) between the Army and the other Italian Armed Forces and European Armies would be even greater.

The Italian Air Force has fifth generation aircraft and the Navy has fourth generation naval vessels that incorporate fifth generation components, while the Army land combat vehicles belong predominantly to the second generation³.

This creates a critical operational issue in terms of:

 the ability to adequately contribute to a confrontation against a peer competitor able to deploy capabilities similar to those of the Alliance;





• the ability to exercise a credible deterrent effect towards state competitors within the Euro-Mediterranean area.

Therefore, having a competitive Army at the cutting edge, equal to the Air Force and Navy, is an essential requirement for having a balanced, effective and efficient Military Instrument.

A balance that must also be achieved in comparison with the main European countries: "falling behind" technologically also means "falling behind" in the effectiveness of the contribution that can be given at an international level and in the competitiveness of a nation's own high-tech industrial sector, of which the aerospace and defense industries represent a fundamental element.

Hence the need to participate in collaborative initiatives meant to produce, within a set timeframe, platforms that are homogeneous and advanced from a performance and technological point of view.

This concept is well exemplified by the protective umbrella given by financial instruments and legal initiatives such as PeSCo⁴ and by the production opportunities provided by temporary international business groupings.

To protract such a critical situation even for a few years could result in the loss of precious capabilities

The modernisation plan requires **urgent interventions** if we are to avoid a serious depletion of the operational capability of the land component.

If we look at the planned investments beyond 2020, it is clear that the Army risks being **underfunded**.

If such a critical situation is protracted even for a few years it could result in the loss of precious capabilities that were acquired at a great cost in terms of time and money and created through the right combination of specialized efficient means and well trained personnel.

This national legacy has been jealously protected but now it risks being lost unless there is a change in investment priorities within Defence.

The following are only some of the essential projects:



"SAFE SOLDIER" SYSTEM

To provide soldiers with greater protection thanks to state-of-theart individual modular equipment. If the current acquisition trend is to be continued, this project would not be completed before decades, thus nullifying its significance and wasting the technological advances of its components.

BLINDO CENTAURO 2

The prototype has already been produced and it was presented in October 2016. This platform to replace the current version (although with a substantial reduction in numbers, decreasing from 400 to 150), now obsolete and unable to operate in high-threat environments.





RENIEWAL OF THE ARMORED COMPONENT

The Army is promoting an initiative to create consensus around an European/multilateral project to develop a Main Battle Tank to be brought into service post 2030. The objective is the creation of a new generation of Main Battle Tank to be employed in its classic role of heavy component, (in open spaces against similarly equipped opposing forces) but also in scenarios considered more likely to happen by analysts, such as urban warfare in megacities and hybrid warfare. Considering this ambitious objective (not just for the capability innovation it will represent but also for the

implications of sharing the project with other European nations) the Army is studying various options to ensure the country has a credible armoured force through the provision of a new MBT. A possible solution is to maintain part of the current fleet of Ariete MBTs in service, through a program of maintenance and upgrades to preserve their operational effectiveness and adapt their safety features to the new requirements of the Theaters of employment.



VBM FRECCIA 8X8

It represents the platform of reference for medium forces, capable of operating in a digitalised environment, with very high level of protection. Approximately half of the ordered vehicles was delivered and interruptions to the program prior to its conclusion will have serious repercussions in terms of overall cost and the possibility of exporting the platform.

NEW RECONNAISSANCE AND ESCORT HELICOPTER (NEES)

The development of a prototype began in 2017 and its introduction in line will happen gradually and simultaneously to the gradual decommissioning of its predecessor, the "Mangusta". This project will confirm the important contribution of national industry in the attack helicopter sector ("Mangusta" was infact the first Combat helicopter produced in Europe).





LIGHT UTILITY HELICOPTER (LUH)

The aircraft will have to replace the multirole helicopters currently in service (five different types), which are now obsolete. In the long term this will deliver consistent savings in fleet management costs thanks to the reduction to only one platform and a decrease of the numbers of aircrafts. This helicopters, derived from a commercial platform, will have strong dual characteristics, meaning it will also be suitable for natural disaster and emergencies without having to always resort to the NH-90, which has greater operating costs.

MULTI ROLE LIGHT TACTICAL VEHICLE (VTLM 2)

The vehicle aims to enhance autonomy and command and control (C2) of light infantry sections to facilitate decentralised operations in areas that require greater autonomy of movement and enhanced communications. The acquisition of this vehicle constitutes the first step towards the full digitalisation of the light force.





All these systems are part of the aforementioned pilot programme called "Forza NEC". The entire process of network-centric modernisation and transformation is based on it, with the aim of creating interoperable assets within the joint and multinational environment.

The programme has so far generated spin-offs of a high technological value in the field of Command and Control, Information Communication Technology and sensors and laboratories for modelling and simulation. However the Army must continue to ensure the vehicles in its inventory are well maintained while still providing a reliable response to new emerging threats. In particular we must sustain:



FIRE SUPPORT

[FH-70 howitzer, PZH2000 self-propelled e MLRS Rocket launcher⁵];



SHORT AND MEDIUM RANGE AIR AND MISSILE DEFENCE

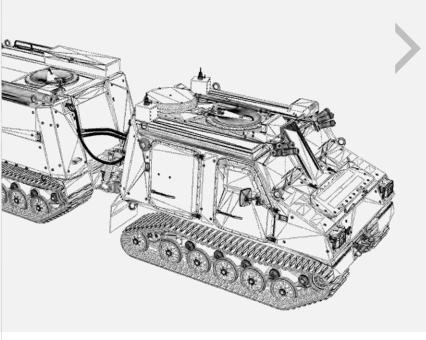
[Stinger and SAMP/T⁶, the system currently employed in Turkey].

The SAMP/T represents the only ground-based medium range system available to Defence: its unavailability would seriously compromise Armed Forces operational capability and defence of the population. To face a significant proliferation of drone technology, the Army has created a counter-UAV Centre of Excellence and has launched the necessary studies to integrate systems against this threat within Air defence command posts;



ENGAGEMENT AND MOBILITY IN THE THIRD DIMENSION

[AH-129 D, CH-47F and NH90].



Lastly, the modernisation plan includes some elements that will develop in the long term. One refers to:

- A new tracked vehicle for Armoured infantry. This is also the object of a PESCO project but alternative solutions (including collaboration with other countries) are being studied;
- All Terrain Vehicle, following a multi-year acquisition plan;
- Armoured amphibious vehicle, developed with the Navy, that will equip the Lagunari Regiment and, in a wider sense, the future Joint Amphibious Brigade.

NOTE

- 1. The renewal of the land component inherently needs the development of a large number of projects that are "low-cost" and of short duration (in comparison to those of the Navy/Air Force) and that are, therefore, more suitable for cutting and re-sizing. On the other side Maritime and Air Force development programs tend to be of much higher cost and longer duration. This means they cannot be cut without drastic operational and industrial repercussions. Therefore there are often severe penalties to be paid if contract has to be modified (many of them were already in place prior to the serious economic crisis which brought a reduction to the defence budget).
- 2. Forza NEC, acronym of *Network Enabled Capabilities*, is a joint industry-defence NATO project to reduce communication time and the time needed to acquire information, needs that have always represented a critical element in the conduct of military operations. It aims to create an innovative military instrument through the digitisation of information, equipment and operational platforms.
- 3. Air, Ground and naval combat vehicles are often classified according to the generation to which they belong. This classification is often based on factors such as design, engines and weapon systems. In general a change in generation happens when a technological innovation cannot be incorporated into existing platforms through upgrade or retrofit.
- 4. Permanent Structured Cooperation, as part of the European Unions Common Security and Defence Policy of art. 42 of the European Union treaty. It was signed by states who meet higher criteria in terms of military capability that have agreed to more binding commitment in this area. In this area, member states that meet the prerequisites, commit themselves to share objectives and co-finance projects. This political will to





implement cooperation in the military sphere, as a first step in the wider integration project aimed at the possible establishment of the European Defense Union (EDU), has been implemented on 8 December 2017 with the political launch of the PeSCo

- 5. Multiple Launch Rocket System.
- 6. Sol-Air Moyenne-Portée / Terrestre (Land).
- 7. It seems opportune to remember that Army air defence assets have already been deployed many times in operations to protect the nation and the civil population. Examples are, Lampedusa 1986, during the diplomatic crisis between Italy and Libya, during the conflict in Serbia when they deployed from the Veneto to Puglia to create a screen with the Hawk system to defend the military and the civilian population, in 2002 to protect the NATO leadership in Rome.

Urgent measures must be put in place, otherwise the Army's operational capabilities will be severely compromised

GREEN BASES: A STRATEGIC PROJECT FOM AN EFFICIENT ARMY.



Today the Army has over 2,700 properties of various types, the majority dating back to the beginning of the 18th century and located in the historic centres of many towns and cities.

The Army has begun the process of reducing its real estate, identifying 1,300 redundant properties to be returned to the State Property Agency.

As today most of these properties still belong to the Army as the State administration only took back possession of those assets for which private organisations expressed their interest. This has exacerbated the maintenance and security burden.

The situation appears precarious: no accidents involving personnel were registered so far but it was just a matter of coincidence, given the current state of disrepair. This exposes the Army to risks and responsibilities towards its employees, families and even people external to Defence.

A credible modernisation and renewal strategy must also consider infrastructures. Due to the high value and sensitivity of the issue the Army has prepared a plan aimed at creating "green bases" that, due to their size and their facilities, will be more cost effective than the facilities currently in use.











The project, in accordance with the guidelines from the Ministry, pursues the following objectives:



reduction of the Army's infrastructure footprint within Italy, with the transfer of old barracks to the State or local administration;



preserving of the Army's operational footprint, setting new units in bases with better potentials and mainly located in central/southern Italy, in order to consistently abide by the defense policy;



respect the environment through the realisation of low-energy impact infrastructures and improvements in the quality of the work place;



search for a cost-effective solution for infrastructure maintenance in order to reduce the financial burden placed upon the operational sector, while envisaging (on the other hand the enhancement of infrastructure interventions affecting the investment sector. This is in line with the government's policy to revive the economy;



opening of social, recreational and sporting facilities, also to local citizens;



grouping of units in areas of greater potential with commensurate economic benefits deriving from the rationalisation of common structures and the reductions of military personnel dedicated to garrison security and details through the use of solutions offered by current technology;



search for facilities and real estate near training areas in order to conduct training activity with reduced transport costs;



increase the quality of structures designed for the wellbeing of personnel and
 their families, through the creation of specific housing areas, multidiscipline sporting facilities and social-recreational facilities;



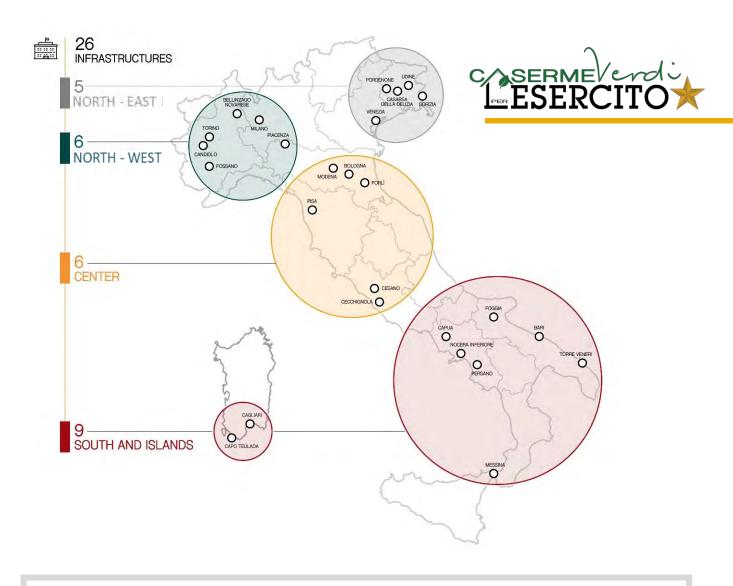
• better integration with the population, also envisaging the opening of recreational and sporting facilities to the citizens;



standardisation of the quality of barracks across the country, through the adoption of projects that are already complete and fully implemented for a new and modern Army;



development of projects that make use of replicable modular structures, with easy-to-inspect systems to limit costs and time needed to complete projects.





COMMAND AREA

It represents the core of the military base and it incorporates all the structures that enable the command function.

Solutions must be found to offer sufficient flexibility to allow spaces to be remodelled rapidly, reflecting the fact that the organisation of the Army is often subject to change.

In order to facilitate the unity of command, command activity will have to be located in a single building or a group of adjacent buildings.

The use of space within the command buildings will have to optimise the areas available through a flexible and modular internal partition. Such an area will have to provide:

- one or more command buildings for the command element in order to manage the various branches (Logistics, training, administrations etc.);
- a guard service;
- parade ground.





TRAINING AREA

It will consist of all the structures and facilities needed to maintain the operational capabilities of military personnel. Taking into account the high technological value of the equipment and material used today, classrooms, simulation centres and multifunctions rooms should all be located together.

Such area will have to provide:

- classrooms;
- simulation rooms;
- multifunction rooms;
- firing ranges;
- open spaces for training activities.







SPORT/RECREATION AREA

This area will include facilities for football, athletics, volleyball, basketball, weightlifting and swimming to improve physical and mental wellness and morale. The facilities will also enhance the social aspect of the lives of military personnel and their families.

This area will become a focal point of the community and will also be available to the local population through the adoption of specific agreements. These areas should be established close to accommodation area.

It should include:

- sports facilities (gym, swimming pool, multi-purpose sports fields, athletics tracks etc);
- meeting rooms;
- restaurants;
- religious buildings;
- childcare;
- commercial stores and other businesses.





ACCOMODATION AREA

The area will have to satisfy the various accommodation needs through the creation of suitable facilities to accommodate both unmarried service members and families.

This will happen through the creation of high-quality housing to satisfy the requirements of small families.

Furthermore, changing rooms with suitable facilities will have to be provided for those living off-post.

For larger families, state-of-the-art accommodation (that involve energy-efficient solutions) will have to be provided and will guarantee the accommodation standards across the country and the possibility to adapt to the needs of different family units through modularity.

Parking areas, proportional to the number of residents, together with green areas and suitable roads and footpaths, will also be needed.



LOGISTIC AREA

This area will include the structures and associated facilities necessary to conduct logistic activities such as:

- management, movement, maintenance, garaging, storage of equipment and weapons;
- preparation and consumption of meals;
- · medical assistance.

The parking area, vehicle recovery facilities, workshops and warehouses will have to be located in areas connected to the command and training areas.

The provisioning and medical facilities do not have to be physically collocated within the logistical area which will inevitably be unsuitable due to high emissions and noise.

The design of the logistical area will have to ease the entry/exit of vehicles, the preparation, loading and unloading as well as the deployment of vehicles.

It will be preferable to have the workshop, the petrol, oil and lubricants stations and the carwash in a dedicated area.

The prefabricated design of the workshops and garages and the choice of the technology to be used will have to be based on the type of vehicles and logistical activities to be conducted.

The following structures and facilities will be collocated in the logistical area:

- workshop;
- petrol, oil and lubricants point;
- carpark and garage;
- warehouse and stores;
- · ammunition depot;
- armoury;
- carwash;
- · kitchen and dining facility;
- transformer substation, from medium to low voltage;
- infirmary.



The objective is therefore to build modern, secure, energy-efficient and fully functional facilities using new construction techniques and having a low maintenance burden.

This must be achieved while also guaranteeing suitable living conditions and ensuring the wellbeing of personnel and their families. After ten years of budget cuts that have made adequate maintenance of infrastructure nearly impossible, this initiative is urgently needed.

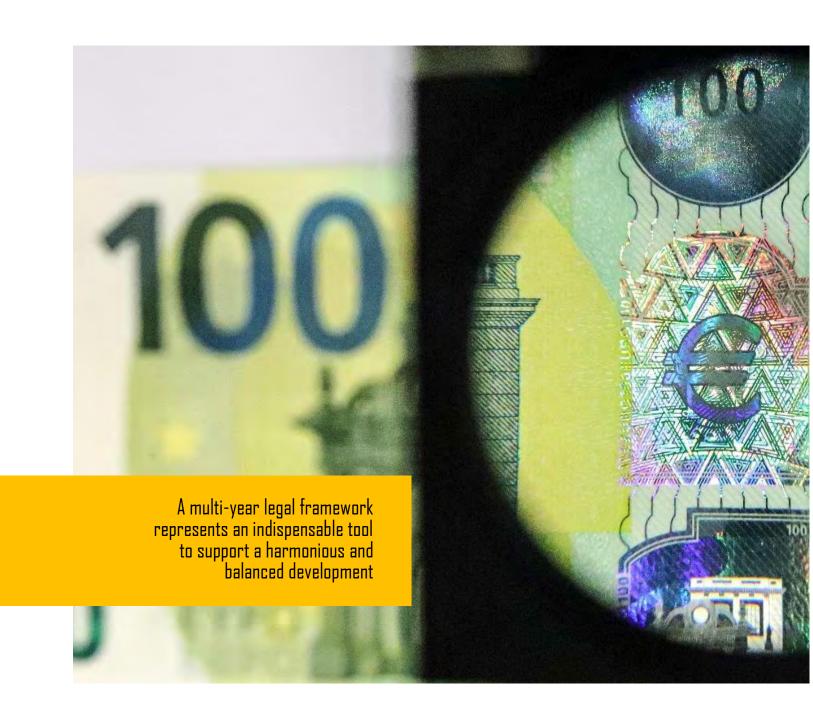
It is an ambitious project but strategically essential and fundamental for a modern, cutting edge Army.

It is therefore essential to plan the necessary infrastructure investment in the upcoming years, also to ensure a state-of-the-art work place, with the highest elevated standards of health and safety.





THE FINANCIAL REQUIREMENTS



There is an inescapable need to **break the negative resourcing trend** by ensuring on one hand an adequate level of funding to grant the suitable maintenance and functioning of the Army and on the other a realistic long-term financial plan through a **multiyear budget law** for major defence investments.

This would mean the Army could rely upon consolidated financial legislation that ensures sufficient stability in the financial programming.

The Army must prepare soldiers for deployment but the part of the budget destined to logistical support, training and readiness has been the subject of a negative trend since 2003.

Funding has dropped from €1,149mln in 2002 to €255mln in 2018, and only €9.1mln of them are allocated to training. This trend has adverse effects on vehicle fleets, equipment and infrastructures and on the operational effectiveness of the land component.

To increase the negative effects of the lack of funding is the current method of classifying operating expenses which means current commitments to operations abroad and Operation "Strade Sicure" receive priority funding.

In the end, this approach significantly penalises units and assets not due to be deployed in operations, making it incredibly hard for them to achieve high levels of readiness and training which should always be maintained regardless of employment in operations.

Moreover, the volume of funding coming from such sources is greater than that available in the standard budget creating the paradox that if the Army was not to be employed in operations abroad or in "Strade Sicure" it would not be have enough resources to conduct training.

One must bear in mind the strict categorisation of resources within the budget ("by actions") is combined with increasingly strict regulatory framework and administrative requirements. This is a risk for the Army as it tries to orderly manage funds, forcing it to resort to "buffer" solutions to guarantee administrative support and the operational effectiveness in maintain the units engaged in international missions.

As far as funding is concerned, the introduction of an ad hoc law (six years would be an ideal solution) for funding, with the perspective of further refinancing (in the shape of lasting economic support) not only for acquisitions but also for the modernisation and maintenance of current

Almost all of the Defense's financial resources are allocated to the Land component

systems (applying the concept of integrated logistical support), would represent an essential tool to support harmonious and balanced development of the Army across all of its components.

These laws would prove useful in overcoming any potential future impasse with the Ministry of Economy, which authorizes only multi-year programs with the necessary financial coverage.

The Army believes that this can lead to other benefits as it will allow Italy to align its military capability planning processes to those currently used in other major partner nations while also helping to increase collaboration with the academic world.



This will in turn allow the development of new advanced systems bringing a clear benefit to national industries and their technological level.

In this regard, specific laws could provide a degree of certainty in the allocation of resources that would allow the production of equipment and material of exceptional quality and competitiveness within Europe.

It is undeniable that, in the future, investment opportunities, such as those linked to new European funds for defence, will require efforts achievable only through laws that provide medium- and long-term continuity to financial programming.

These guarantees would allow the industrial compartment to:

- conduct medium- to long-term planning;
- source supplies from small and medium companies;
- optimise production lines with lower weapon acquisition costs;

 increase research and development investments in order to remain competitive at an international level.

while providing employment opportunities in a high-value sector, which in Italy constitutes an unmatched pillar of technology, manufacturing, employment and economic growth. It also contributes to economic growth through significant direct and indirect effects on national GDP.

In order to close the technology gap that has arisen in recent years it is necessary that the modernisation of the land component receives the same degree of attention as that of the naval and air.

The renewal of the equipment of the Air Force and Navy has already been enshrined in laws linked to large capability programs that have involved the industrial sector with remarkable technological benefits, launching effective modernisation processes thus delivering to the Nation cutting edge Maritime and Air Forces¹.

To create the right synergies and fix the critical situation created in recent years, all the resources available to defence, at least in the 2019-2024 timeframe, should be destined to the land component.

Specifically, the following fundings should be allocated to the Army:

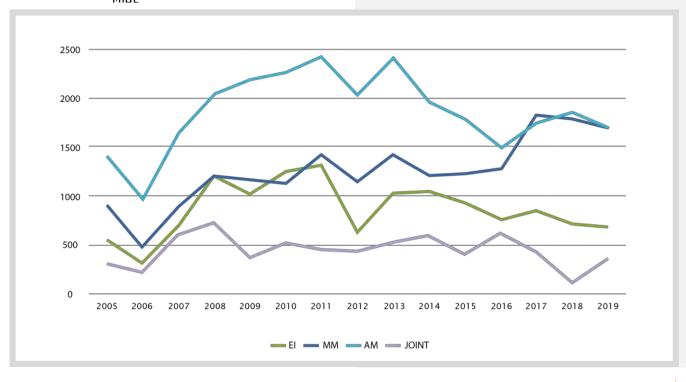
- those already written in the defence budget that are currently not assigned;
- contributions from the Ministry of Development (Ministero dello Sviluppo Economico - MiSE)², for national technological development;
- those made available to Defence through special funds created by the political authority. Through the creation of a fifteen-year special investment fund, inserted into the annual national budget, the Government hopes to relaunch national development by financing various programs proposed by the central administrations of the State³.

Trend of investment of the Ordinary budget and of the funds allocated by the MiSE



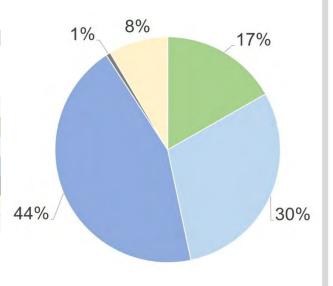
In synthesis, the depletion of the Army's capability is a consequence of inadequate financial resources over a ten-year period which has not been reflected across Navy and Air Force.





Funds allocated on the Ordinary Budget and by the MISE

	ORDINARY BUDGET	MiSE	FUNDED 2018 - 2032
ARMY	3421	4182	7603
NAVY	6149	7407	13556
AIR FORCE	14527	5474	20001
cc	585	221	806
TAIOL	3652	212	3864
тот	28334	17497	45830



This underfinancing is clear when we consider that the Army receives only 16.59% of all the modernisation funds directed at Defence, whereas the Air Force receives 43.64% of such funds and the Navy 29.58%. The figure for the Army will fall to 13% if we analyse only the next 6 years.



As a consequence of this, the Land Component requires urgent measures that **immediately** correct the imbalances among the investments for the Armed Forces.

The recent revision of the resource distribution criteria only envisages a slightly better allocation (compared to the other armed forces⁴) to the Army from 2019. This will not facilitate a closure of the capability gap between the various Armed Forces in an acceptable time frame.

The Army modernisation requirements, approved at Defence level, require an investment of €45.8bn and €13bn of them is required in the next 6 years.

Unfortunately, current plans allocate only very limited resources⁵ to confront this requirement (only €3.4bn from the national budget and €4.2bn from the Ministry of Economic development over the period 2017-2033).

It is therefore clear that it would be necessary to allocate a further €5bn to the Army in the period 2019-2024 to reduce the capability gap within the Ministry of Defence.

The Army has requested these resourcing resources to the head of the Armed Forces, asked to obtain the funds from the so called "investment fund".

The table on the following page shows the scale of the funding necessary to achieve a first partial rebalancing of the Army capability.

The need for a series of legal measures that enable critical issues to be confronted must be re-emphasised.

Urgent investment is also needed in the infrastructure sector.

There is a requirement for €80mln to ensure the adeguate functioning of the Army infrastructures. This figure would only allow for maintenance of the existing facilities.

The allocations of the last ten years have always been lower than the cited requirements, averaging at about €50mln.

To compensate for this underinvestment, it would be necessary to receive annual fundings of $\in 100$ mln for the next 10 years⁷.



The Land Component requires urgent measures that immediately correct the imbalances between the investments in Armed Forces



ADDITIONAL
RESOURCES
REQUESTED BY THE
ARMY
ON INVESTMENT
FUNDS
DIVIDED BETWEEN
ORDINARY BUDGET
AND MISE

2019-2024 [data in Millions of Euro]

*the "Maintenance of the Heavy Component" has already been financed with the previous Budget Law, but is included among the projects for the capacitive renewal of the aforementione 5bn€

	ACTIVITIES	2019	2020	2021	2022	2023	2024	TOTAL
	Sistema Soldato Sicuro (SIC) Acquisition and updating	1,00	74,40	148,80	186,00	186,00	186,00	782,20
	Cybernetic resilience development and CIS and C2 strenghtening	2,10	31,01	32,68	42,65	47,95	43,55	199,40
	Counter RPAS capability	0,00	0,30	2,80	4,00	4,00	6,00	17,10
	VTLM 2 «Lince»	0,00	30,00	50,00	62,20	62,80	56,80	261,80
	Light Utility Helicopter (LUH)	2,00	20,00	150,00	165,00	165,00	165,00	667,00
	Role 2 - Dual Use	5,00	5,00	5,00	18,00	18,00	0,00	51,00
ORDINARY BUDGET	Ammunition	10,00	50,00	50,00	50,00	50,00	0,00	210,00
	multipurpose vehicle	1,00	19,00	45,00	45,00	45,00	45,00	200,00
	Recce/utility vehicle	0,00	14,98	17,20	18,50	18,50	12,80	81,98
	Towed indirect fire support capacity modernization	5,00	15,00	25,00	28,00	26,00	38,00	137,00
	Strenghtening C2 capability Multinational Division South (FRIULI)	2,00	2,00	2,00	4,00	11,00	10,00	31,00
	Army simulation systems	0,10	4,90	10,00	10,00	10,00	10,00	45,00
	◆ Armored/Heavy component maintenance*	0.00	0,00	60,00	80,00	80,00	80,00	300,00
	Vehicle Logitistic Support	17,00	60,00	86,00	89,00	80,00	77,00	409,00
	Infrastructure activities	2	12	15	15	45	45	134,00
	Environmental monitoring	3,5	10	10	10	10	10	53,5
	TOTAL O	rdina	ry Bı	ıdge	t			3.579,98
MiSE	BLINDO CENTAURO 2 L266/05 art 1 c 95	0,00	0,00	0,00	78,40	116,00	130,00	324,40
	VBM 8x8 L266/05 art 1 c 95	0,00	38,00	77,00	60,00	130,00	185,00	490,00
	New EES L266/05 art 1 c 95	85,00	85,00	84,80	33,20	34,00	0,00	322,00
	B1NT - New RADAR	0,00	14,00	22,40	28,40	23,40	24,70	112,90
	NH 90 Logistic Support	40,00	40,00	40,00	40,00	20,00	20,00	200,00
TOTAL MISE							1.449,30	
TOTAL						5.029,28		

NOTE

- 1. Law 808/85 authorises concessioned financing to national companies to facilitate industrial activities, developmental research experimentation or feasibility studies in the aeronautical sector. Law 421/96 supports technological development in the aeronautical sector. Law 266/97, is dedicated to the FREMM frigate project and other priority projects for defence (including VBM 8x8, new recce and escort helicopter). Law 147/13 art 1 para 37 (so called Naval Law) provides for the consolidation of the high tech naval industry and the maintenance of the maritime capability within Defence.
- 2. Defence investment programs must adhere to the following criteria to be able to access such funds:
 - they must support sectors of high technological and industrial value;
 - an high national interest in the development of competitiveness and industrial know-how;
 - high technology content of the military component's operational capability.
- 3. The fund was created through art 1, para 140 of law 2017 and is re-financed through art 1 para 1072 2018 allowing defence to access these

- resources amounting to €22bn between 2017 2033.
- 4. Army 34,46%, Air Force 29,06%, Navy 29,28%, Joint 5,29%, Carabinieri 1,91%.
- 5. Such funds are already directed towards the sustainment of operational programmes launched during previous financial years.
- 6. A €43.6bn fund over a 15 year period, of which it is likely that €12bn will be assigned to Defence.
- 7. Similarly to what the Navy has received since 2007 through a multiyear modernisation plan Known as "Brin Plan" with the aim of ensuring adequate functionality and fully operational naval bases. The document reviewed approved passed infrastructure and industrial plans that had never been realised due to lack of funding, it combined the adjustment and the restructuring of infrastructure and connected installations with modernisation of weapon systems.



A RESILIENT AND INTEGRATED NATIONAL SYSTEM



The relationship between the military and the academic and industrial worlds, as previously highlighted, will be crucial to maintain of the military advantage.

Therefore, when defining the military instrument one must always bear in mind that the capability to ensure the security of the country must be developed through a multi-dimensional, integrated, inter-agency, international and public-private approach.

This approach, together with the complementary use of resources, will contribute to make the national system more resilient, able to prevent and confront undesired consequences and threats to the nation while supporting Allies and Partners.

In order to more easily confront the complexity of change, the Armed Forces will have to increase and maintain a culture that allows the constant evolution of its identity. Decisive enabling factors will be:



The availability of an agile and flexible Army



Multipurpose military capabilities



A persistent interconnection between the military, civilian and private sectors through a comprehensive collaborative network

Since the major driving force behind the development of new technology will come from the private sector, the relationship between the military sector and the academic/industrial one will play a pivotal role.

Defence will have to develop a renewed multidimensional approach (Approccio Nazionale Multi-Dimensionale - ANMD)1 starting from the conceptual phase of the transformation process of the military. This will facilitate the growth and deepening of the understanding of the characteristics and the key elements that will shape the future operating environment. This know-how will become an increasingly indispensable prerequisite for "development experimentation concept" which aims to identify the priorities for transformation of the military, capability gaps and research possible solutions².

The Armed Forces will have to maintain and increase the propensity to adapt and renew their identity.



The modernisation will have to be conducted in synergy with the national system, to create development and maintain and increase employment.

The ability of the defence industry to support the Armed Forces in all four of their stated missions is essential.

Concurrently with a **single systemic shared vision**, provided by the ministry and consistent with the whole-of-government approach, it will be necessary to create and integrate specialized advanced competences in the industrial defence sector through the creation of highly specialised centres of competence created by universities and industry (Small, medium and large companies).

Creating an operations centre within the Ministry will be equally important. It will be tasked to:

- oversee the competence centres;
- support small/medium companies and universities in the protection and

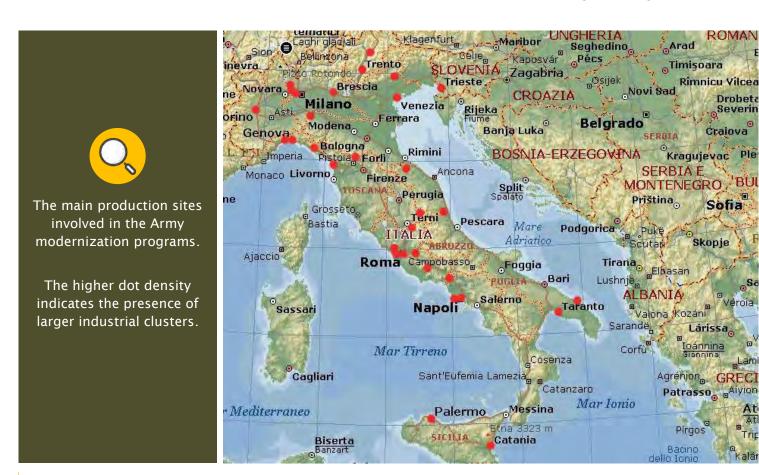
- enhancement of intellectual property as a strategic development and competitive asset;
- support the insertion of small/medium companies and universities into the "value chain" of the defence industry;
- support our companies in their attempts to penetrate international markets. This will lead to a Defence of business, research and strategic innovation³.

The army fulfils a strategic role of supporting the research and development of our national industrial base.

Historically, this position has been strong in light and heavy industry, particularly in engineering, helicopter and missile production and automotive production.

Over the course of the last twenty years it has widened to include the textile/clothing industry, glassware, opto-electrics, information technology and cybernetics⁴.

The concept of collective security can be linked with the concept of collective budget, through a





coordinated national commitment for the strategic/capability development of the entire Country.

In fact, in addition to the well-known national and European investments strictly involved in military operational development, national and European fundings fall under the heading "Investments" in cash, related to the development of technologies for Collective Security and the relevant university, industry and research components, which includes the cognitive and infrastructural background set up for investment programs⁵.

A recent study carried out by Leonardo, one of our leading companies in the defence and security sector, has clearly demonstrated that the Italian aerospace, defence and security supply chain can act as a platform from which we can create industrial development, new technological competences and growth for the national system.

The study only takes into consideration data from Leonardo, but this is already sufficient to demonstrate the size of the potential impact of this sector on the Italian economy and the contribution of the Defence industrial component, which can act as a catalyst and accelerate technological and industrial development.

Leonardo contributes with nearly a quarter of national high-tech exports. In terms of value added, the research demonstrates the multiplicative effect on the economy. For every 100 euros of produced added value, an additional 160 euros are generated locally⁶.

It is evident that these challenges call for more than purely military responses and request actions by the entire national system including civilian, public and private components within a wider national concept of resilience.

Consider that for every 100 employees in Leonardo (with about 29,000 employed nationally) an additional 260 are created in the national economy.

This, combined with the 4,000 linked industries across the country (about 70% are small and medium-sized companies), makes the AD&S sector second only to the automotive one, in terms of overall size.

It is increasingly necessary to create operational synergy and systemic and institutional collaboration⁷.

It is essential to adopt an approach aimed at satisfying the Defence's needs, and the Army's in particular, strengthening the synergies with the industrial defence sector⁸.

Particular emphasis must be placed on the future evolutions of research and development programmes in the military sphere⁹. The objective should be not to merely obtain the resources/funding but also not to lose the precious experience gained during the last ten years for Forza NEC, in the strategic collaboration with national industry.

The Army and industry must work towards a greater sharing of reciprocal needs:

- the satisfaction of the needs of the Army in order to reach the objectives assigned by the Nation;
- a consolidated and sustainable plan to assign NATO/EU commitments to the industrial sector.

The drafting of the requirements for new platforms and the choice of advanced technologies by the Army must also take into account the value of these choices to the export market which will allow the industrial sector to increase its exports. This will in turn have economic benefits for Italy as it will reduce the non-reoccurring costs associated with the production of a prototype¹⁰ and also reduce production and logistical support costs.

The Army could serve to publicise and highlight the industrial excellence of the Italian defence sector around the world through the use of various weapon systems and platforms. The Army can demonstrate their effectiveness in extreme situations (terrain, climate, high intensity combat environment etc.) found in the areas in which it is called to operate. The Army can give the products the "Combat proven" tag.





NOTE

- "A methodology of crisis management, through which one can conceptualise, plan and conduct missions, in situations in which the efforts (inclusing will, capability and resources) of the single ministries and agencies are coordinated and synchronised on a national and multilateral level in order to reach the desired results, considering that the various actors can be called to carry out, even simultaneously and integrated, activity of combat, stabilisation, reconstruction, reconciliation, and humanitarian support" – a joint document of reflection Ministry of foreign Affairs and Ministry of defence, "Multi-dimensional national approach to crisis management" 2010.
- 2. "Duplice uso and resilienza", conceptual integration document of the MOD's Program Lines of Development, ed. 2018.
- 3. According to the MOD's speech about the Program Lines of Development at the 4th Joint Commissions of the Senate of the Republic and of the Chamber of Deputies, Rome 26 July 2018.
- 4. CESI "Il futuro dell'Esercito Italiano tra opportunità e incognite", 2016.
- 5. "Duplice uso e resilienza", conceptual integration document of the MOD's Program Lines of Development, ed. 2018.
- 6. "La filiera italiana dell'Aerospazio, della Difesa e della Sicurezza", The *European House*-Ambrosetti in collaboration with Leonardo, final report, September 2018.
- 7. "Duplice uso e resilienza", A ministerial conceptual development document, ed. 2018.
- 8. A process already launched within PROSPECTA (Program study of prospective enabling crisis technology a joint investigation plan carried out in synergy with the national industrial sector, whose principle aim was to define the predictable needs of the army in terms of materials and complex platforms with criteria of modularity and the flexibility to evolve and permit solutions over time to confront new threats and guarantee their effectiveness from a protracted period of time) and the workshop "Piano congiunto E.I Industria della Difesa per I'A/R dello strumento militare Terrestre".
- 9. Similar to that conducted for Forza NEC.
- 10. This could occur, for example, with the sale to the United States of the new IVECO amphibious vehicle: in this sense, Italian defence could enjoy the advantage of not having the burden of non-recurring and development costs.

CONCLUSIONS



It seems evident that, in recent years due to the continuing economic crisis and the growing sensitivity towards the more immediate needs arising from Homeland security tasks and the fight against terrorism, the renewal process of the Army has not developed in the manner it was initially hoped for. This has produced a gap between what was needed and what has been achieved in the modernisation process.

To "PREPARE TOGETHER FOR THE CHALLENGES OF TOMORROW", in line with the five lines identified by the Chief of the General Staff of the Army, we will have to pursue each line in equal measure to ensure we maintain comprehensive operational effectiveness.

The human component, which is the supporting column and a strategic asset that enables the entire national system to be enhanced, needs to be constantly valorized. To be able to have ready, motivated, professionally prepared men and women in possession of a strong moral compass is indispensable. The acknowledgment of the centrality of our individuals must be matched by a commensurate investment in their development and well-being which is essential for the improvement and enhancement of the operational output.

In order to continue to be decisive in the future, the Army will have to develop a **culture of innovation** and **experimentation** where each element of the institution, starting from the single soldier, will be required to exercise strong capabilities of integration and adaption to the changing operational environment. Only this approach will allow a fruitful and optimal employment of future innovative technologies and their rapid and coherent application in the sphere of military action.

We must search for solutions at every level to achieve a **better balance in favour of the operational component** while also acting with synergy in order to recover the lost capabilities with respect to the other Armed Forces, Allies and Partners.

Whenever possible, in the coming years the total investment available to the Armed Forces (including that from the Ministry for Economic Development) should be allotted to the Army. There is a pressing need for fundings in the next six years: €5bn is required to modernise and renew essential capabilities. Failure to make this funding available will jeopardize our ability to operate jointly and internationally.

In light of the high and intense level of operational commitment, at home and abroad, it is essential that the funding plan ensures the Army receives the necessary funds to guarantee the indispensable training and readiness activities as well as the maintenance of means and materiel. This requirement has been exacerbated by an elevated rate of wear and tear that has drastically reduced the level of efficiency.

In the face of a continuously declining trend, it is now fundamental to assign funds to the maintenance of infrastructures. As we have seen, this will require funding of €100mln a year over the next ten years. This figure will serve to address current needs and the safety standards of the work place.

To address the problem of antiquated and fragmented military facilities the "Green Bases" project must be implemented. This is a medium/long term initiative to provide the Army with modern, adequate and functional structures that meet operational and daily needs. They will have a low environmental impact and an elevated energy yield with sporting areas open to the public.

Italy is also member of a select group of nations that have a **Defence industry with a long tradition** of success. €13.5bn revenue in 2016 places Italy in the world top ten, reflecting in a supply chain composed of large multinationals, a dense network of small and medium companies, research centres and university centres of excellence spread across the country.

These elements are the distinctive nature of a field characterised by the capacity to make entirely domestical systems and that can count on a profitable collaboration between the Defence sector and industrial and scientific companies. A state of affairs that still requires adequate investments in order to feed the development activity and a strong culture of innovation.

The Chief of Staff of the Army has identified an indispensable path which must be followed to facilitate a healthy, robust and capable institution, unique in its abilities and potential. An unreplaceable resource that has the capability to contribute in a decisive manner, today and tomorrow, to the defence of the country, the security of our citizens and to consolidate the role of Italy in the international community, in the certainty that:

"WE WILL BE THERE, AND WE WILL ALWAYS BE THERE", READY TO "DO MORE TOGETHER".

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