“This presentation may include statements that present Vale’s expectations about future events or results. All statements, when based upon expectations about the future and not on historical facts, involve various risks and uncertainties. Vale cannot guarantee that such statements will prove correct. These risks and uncertainties include factors related to the following: (a) the countries where we operate, especially Brazil and Canada; (b) the global economy; (c) the capital markets; (d) the mining and metals prices and their dependence on global industrial production, which is cyclical by nature; and (e) global competition in the markets in which Vale operates. To obtain further information on factors that may lead to results different from those forecast by Vale, please consult the reports Vale files with the U.S. Securities and Exchange Commission (SEC), the Brazilian Comissão de Valores Mobiliários (CVM) and in particular the factors discussed under “Forward-Looking Statements” and “Risk Factors” in Vale’s annual report on Form 20-F.”

“Cautionary Note to U.S. Investors - The SEC permits mining companies, in their filings with the SEC, to disclose only those mineral deposits that a company can economically and legally extract or produce. We present certain information in this presentation, including ‘measured resources,’ ‘indicated resources,’ ‘inferred resources,’ ‘geologic resources’, which would not be permitted in an SEC filing. These materials are not proven or probable reserves, as defined by the SEC, and we cannot assure you that these materials will be converted into proven or probable reserves, as defined by the SEC. U.S. Investors should consider closely the disclosure in our Annual Report on Form 20-K, which may be obtained from us, from our website or at http://us.sec.gov/edgar.shtml.”
1. Opening remarks
2. Safety and operational excellence
3. Introduction to tailings dam
4. Tailings management
5. Final remarks
Opening remarks
A year ago, we added two new pillars to our strategy

New pact with society

Safety and operational excellence

Maximize flight to quality in Iron Ore

Base Metals transformation

Discipline in capital allocation
We are honouring our new pact with society...

...with efforts to mitigate the impacts of COVID-19

5 million detection kits to Brazil
31 million items for health professionals
Construction of field hospitals
R$ 500 million in actions to Brazilian society

...and advancing with the reparation of Brumadinho

R$ 3.8 billion in indemnifications¹

<table>
<thead>
<tr>
<th>People</th>
<th>Civil</th>
<th>Labour</th>
</tr>
</thead>
<tbody>
<tr>
<td>+106,000</td>
<td>+5,800</td>
<td>+1,600</td>
</tr>
</tbody>
</table>

Communities of Minas Gerais receive additional support in the pandemic

¹Updated on July 7, 2020
Safety and Operational Excellence
We adopt the three lines of defense model to assure our safety and operational excellence

<table>
<thead>
<tr>
<th>Business units</th>
<th>Safety &amp; Risk</th>
<th>Internal audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify, monitor and manage risks</td>
<td>• Define risk norms, standards and policies</td>
<td>• Compliance Office is responsible for internal audit and whistleblower channel.</td>
</tr>
<tr>
<td>• Implement risk controls</td>
<td>• Ensure the effectiveness of business and operations risk control</td>
<td>• Provide assurance to the Audit Committee and the Board of Directors regarding the general adequacy of controls</td>
</tr>
<tr>
<td>• Proactively analyze and update the risk profile</td>
<td>• Check the implementation and effectiveness of risk controls</td>
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<tr>
<td>• Define standard operating procedures</td>
<td>• Consolidate the registry of operational risks</td>
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</tr>
<tr>
<td></td>
<td>• Complement the minimum risk standards</td>
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</tr>
<tr>
<td></td>
<td>• Set execution standards</td>
<td></td>
</tr>
<tr>
<td>1st line of defense</td>
<td>2nd line of defense</td>
<td>3rd line of defense</td>
</tr>
</tbody>
</table>

1st layer
2nd layer
3rd layer of defense

Executive Board
Board of Directors / Audit Committee

We adopt the three lines of defense model to assure our safety and operational excellence.
Vale has strengthened its governance to safety and operational processes, as well as to its geotechnical structures

Operational Excellence and Risk Committee
- Support to the Board of Directors and interact with Dam Safety Committee
- Assess corporate risk management
- Monitors operational risks, especially geotechnical ones

Extraordinary Ind. Consulting Committee for Dam Safety
- Support to the Board of Directors, through the Operational Excellence and Risk Committee
- In 2019, it held 19 meetings, spent 40 days in field trips and released 16 reports to the BoD
- Committee will be maintained until April, 2021.

Executive Risk Committee for Geotechnics
- Support to the Executive Board
- In 2019, Board has approved a new risk policy and since then four Executive Risk Committees have been created, one with focus in geotechnical Risks

Safety and Operational Excellence Office
- Report to the CEO
- Responsible for the review of the Tailings Management System, the relaunch and review of Vale Production System and global maintenance structure.
The second line of defense is managed independently from operations

- Development of a new and transformed Tailings Management System.
- Ensure the application of best practices to continually monitor mine waste facilities.
- Support to the EoR (engineer of record) implementation.
- Technical support to the risk management process (methodologies and process).
- Authority to stop any given operation whenever necessary
Introduction to tailings dam
Tailings dam are used to store liquid, solid, or a slurry of fine particles

**Downstream**
The downstream shell is built on compacted soil, regardless of the type of tailings used. It is built in the direction of the water flow (downstream).

**Upstream**
The dam body is constructed using the deposited tailings. It is built in the opposite direction of the water flow (upstream). The dam needs thick tailings so that the shell can be constructed.

**Centerline**
The centerline method is a hybrid of upstream and downstream designs. In Centerline construction, the dam is raised vertically from the starter dam.

Solid tailings are often used as part of the structure itself.
Tailings storage facilities requires continuous management and risk assessment for the most common failure mechanisms

• **Overtopping:** Water volumes exceed the capacity of the dam

• **Slope stability:** The slope is stable, if the available shear strength of the tailings/soil exceeds that required to keep the slope stable

• **Foundation failure:** Soil or rock below the dam is too weak to support the dam

• **Liquefaction:** The solid material begins to act and move like a liquid. Can be static or dynamic

• **Internal erosion:** Seepage within or beneath the embankment causes erosion along its flow path

Monitoring, inspections and reviews from internal and external experts
Vale’s tailings dam portfolio is concentrated in Brazil

Location and operational status of operated tailings storage facilities¹ (TSF)

1 Includes facilities within Vale operations and excludes Non-operated Joint Ventures (JVs). Vale’s non-operated JVs has 21 active and 5 inactive structures, of which 2 structures are upstream. The number of tailings storage facilities is calculated based on the definition agreed by the International Council on Mining and Metals Tailings Advisory Group in response to the Church of England information request, which may differ from Brazilian National Mining Agency definition.

2 Inactive includes facilities not in operational use, under maintenance and in post-closure care and maintenance.

For further details on tailings dam in our portfolio please see our more detailed disclosure here.

64 operated tailings facilities
- 27 active
- 35 inactive
- 2 under construction
Vale is evolving with the de-characterization of upstream tailings dams and other structures in Brazil

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022+</th>
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<tbody>
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<tr>
<td>Fernandinho</td>
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<td>Grupo</td>
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<tr>
<td>Forquilha I</td>
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<td>Forquilha II</td>
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<tr>
<td>Forquilha III</td>
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<tr>
<td>Vargem Grande</td>
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<tr>
<td>B3/B4</td>
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<tr>
<td>Sul Superior</td>
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</tbody>
</table>

Other structures to be de-characterized:

- Doutor, Campo Grande dams and three drained stacks are in engineering phase
- Pondes de Rejeitos, base metals dam, will be concluded in Dec/20
- Smaller upstream structures. First one will be concluded in Dec/20

Note: The schedule may change until the phases are completed and according to public agencies.
Vale has completed the containment structure for Sul Superior
Despite the COVID scenario, the works on containment structures continued as considered essential to safety.
Tailings Management
We are implementing a new Tailings Management System

Tailings Management System

What

Technical
Guiding principles of key elements
Recommended best practices
Minimum stage gate technical requirements
Standard operating procedures

How

Technological
Technology guiding principles
Functional landscape
Analytics maturity model
Ideal system requirements: Data governance + ownership

Who

Organizational
Roles and responsibilities
Behavioral transformation
Governance & Management operating system

Cultural transformation
To design Vale’s tailings management system, gaps were assessed for each key element.

Project life cycle:
- Planning
- Design
- Construction / Implementation
- Operation
- Care and Maintenance / Closure / Post-Closure

Standard Operating Procedures:
- Dam Classification
- Water Management Guideline
- Dewatering Technology Selection
- Closure Planning
- Geotechnical Investigation
- Geotechnical Analysis
- Hydraulic Structures
- Dam Break Analysis
- Risk Management
- Quality Assurance and Quality Control Program
- As-Built Report
- Operation, Maintenance and Surveillance Manual
- Emergency Preparedness and Response Plan
- Change Management
- Monitoring & Design Verification
- Dam Safety Inspection
- Dam Safety Review

International Standards:

25 geotechnical normative documents under development to fully comply with the standards.
Geotechnical Monitoring Centers run 24/7 basis for 100 structures

Geotechnical systems evolutions

Trigger response plans and alerts system

New dam monitoring technologies

- Real time piezometers monitoring
- Video analytics with artificial intelligence
- Geophones to measure dam’s response to seismic activity
- Radars ensure fast response and precision
- Satellite, drone imagery and sound alarms
RASCI\textsuperscript{1} matrix to define roles and responsibilities

72 key processes, including:

- Governance
- Design and planning
- Construction
- Risk management
- Operations
- Audits and Reviews
- Closure
- Emergency Preparedness

\textsuperscript{1} RASCI matrix: Responsible, Accountable, Supporting, Consulted and Informed.
Roles and responsibilities are being reviewed and aligned with international best practices.

Overall Business at executive level (i.e. Executive Director)

Delegated Responsible Person of AEO at a corridor level (i.e. Operational Corridor Director/COO)

Executive Ownership (Accountable Executive Officer)

Independent Tailings Review Board

Geotech Governance & Standards Ownership

Business-level Ownership (Dam Owner)

Engineer of Records

Geotech Assurance (Checks & Balances)

Operations

Risk-level Ownership (Risk Owner)

Control-level Ownership (Risk Control Owner)

Note: Aligned with MAC (Mining Association of Canada) best practices.
Our Tailings Management System is based on three levels: Routine, Performance and Risk (RPR system)

<table>
<thead>
<tr>
<th>Routine</th>
<th>Performance</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Check of Operational Discipline</td>
<td>Continuous Check of the Tailings Dam Geotechnical Performance</td>
<td>Failure Modes and Critical Controls Mapping</td>
</tr>
<tr>
<td>Basic Geotechnical Guidelines</td>
<td>EoR (Engineer of Record)</td>
<td>Dam Portfolio Risk Assessments through HIRA (Hazard identification and risk analysis)</td>
</tr>
<tr>
<td>Define the KPI’s for the Routine Periodic assessment by the Geotech assurance team</td>
<td>Prepare a formal monthly safety report based in the geotechnical monitoring and field inspections. Summary reports to be sent to Senior management level</td>
<td>Full integration with the Enterprise Risk Management (ERM)</td>
</tr>
<tr>
<td>Dashboards with key performance indicators being prepared and used in the operational meetings</td>
<td>17 EoR’s hired for Iron Ore EoR’s responsible by Dam Safety Inspections</td>
<td>All dam portfolio covered until end of 2022 Three global consulting companies supporting Vale</td>
</tr>
</tbody>
</table>
Basic Geotechnical Guidelines

KPI's and dashboards

- Business risk integration
  - Routine and special inspections
  - Adherence to recommendations
  - Monitoring and instrumentation
  - Legal requirements

- Semiannual Indicator
  - Dam breach study
  - Maintenance, operation and surveillance manual
  - Dam safety inspection
  - Emergency preparedness and response plan
  - Dam safety review
  - Governance effectiveness
  - Water management
  - Life cycle planning
  - Change management

Per status
- Effective
- Partial Effective
- Not Effective
- Non Applicable
Engineer of Record and the continuous performance assessment

- The **EoR is external to the operations** and is integrated with Vale's lines of defense.

- Model of **continuous monitoring**, and a more rigorous one. Better integration of the dams' information and databases.

- Regular security inspection, and issues **monthly technical reports**, continuously interpreting the results of the inspection and monitoring activities of the structures.

- New upgrades or downgrades of Declaration of Stability ("DCE") may be issued at any time throughout the year*

- **Good practice** recommended by MAC (Mining Association of Canada), CDA (Canadian Dam Association) and the Extraordinary Independent Investigation Committee.

### Guidance Table for Classification of the Dams Geotechnical Performance Condition

- Satisfactory without restriction
- Satisfactory with restriction, without compromise safety
- Satisfactory with restriction, possibly compromising safety
- Unsatisfactory

* DCE issue only in Brazil (legal requirement)
Dam portfolio risk assessments through Hazard Identification and Risk Analysis (HIRA)

Planning
- Work plan
- Internal communication
- Inventory
- Priorities
- Hire consultants

Testing
Chosen sites:
- Sudbury and Long Harbor

Implementation

Lessons learned

2019 2020 2021 2022

All dam portfolio covered until end of 2022

• Pilot carried out in Canada during 1H20
• Three global companies working across the portfolio - 2 years to complete
• Teams composed of geotechnicians from all lines of business, exchange of experiences

Conclusion
Portal in geotechnics to share expertise and disseminate knowledge

Data base with technical articles, standards and guidelines

Technical studies calendar

Integration workshops

Geotechnical specialization course
- 360h (soil and rock mechanics, engineering geology, tailings disposal, risk management)
- 40 professionals/year (including community professionals)
- Partner: Ouro Preto Federal University
Geotechnical team is also part of Vale’s Cultural transformation with transparency, responsibility and technique

<table>
<thead>
<tr>
<th>Roles are clear</th>
<th>People understand their roles and responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountabilities are defined</td>
<td>There is clear accountability at both process and personal level</td>
</tr>
<tr>
<td>Geotechnical team leads the way</td>
<td>Clear Geotech Engineer Identity and succession planning</td>
</tr>
<tr>
<td>Lines of defense in place</td>
<td>Boundaries are set and all stakeholders understand their part</td>
</tr>
<tr>
<td>VPS is integrated and in action</td>
<td>VPS is internalized and becomes a compass for decision-making</td>
</tr>
</tbody>
</table>
Case 1: Brucutu

- On December 2019, Vale proactively decided to suspend temporarily the disposal of tailings at the Laranjeiras dam, originated at the Brucutu plant, while assessing the dam’s geotechnical characteristics.

- The decision was taken after conjoint examination from different teams, as well as the second line of defense, with independency from production goals, regardless of potential production impacts.

- During the assessment, which still in place, the Brucutu plant, an important source of pellet feed for Vale, will run with 40% of its production capacity.

- Action plan towards stability declaration (DCE): Execute a geotechnical investigation to check the need of a dam reinforcement.
Case 2: Itabiruçu

• On October 2019, Vale proactively decided to suspend temporarily the raising construction and disposal of tailings at the Itabiruçu dam, while assessing some deformations associated with the raising works.

• The decision was taken with the recommendation from the second line of defense, in line with auditors, even for a dam with stability declared by the external auditor (positive DCE).

• The dam still remains with positive DCE but was decided by 2nd and 1st line together the EoR to finish all the engineering studies to return with the raising construction.

• Action plan towards return to the raising works: Finalize the engineering and deformation modelling, expected for mid-August.
Final Remarks
Our new tailings management approach is based in a multi layers of protection, improving our capacity to avoid accidents.

<table>
<thead>
<tr>
<th>Business units</th>
<th>Safety &amp; Risk</th>
<th>Internal audit</th>
<th>External sentinels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geotechnical operations</td>
<td>Safety &amp; Geotechnical support team</td>
<td>Independent Board Committee for Dam Safety</td>
<td>Engineer of Record</td>
</tr>
<tr>
<td>Geotechnical operations</td>
<td>Geotechnical support team</td>
<td>Chief Compliance Officer</td>
<td>Independent Auditors</td>
</tr>
<tr>
<td>team</td>
<td>Operational Excellence Office</td>
<td>Internal audit and whistleblower channel</td>
<td>Dam Safety Reviews</td>
</tr>
<tr>
<td>1st layer</td>
<td>2nd layer</td>
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</tr>
<tr>
<td>1st line of defense</td>
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<td>2nd line of defense</td>
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<td>3rd line of defense</td>
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</tbody>
</table>

- **Engineer of Record**: Dam safety inspections and performance assessments
- **Independent Auditors**: Public Prosecutors technical reviews and Tailing Review Boards
- **Dam Safety Reviews**: Periodical technical reviews by external engineering company
Our objectives

1. Finalize the new Tailings Management System implementation across all business by December 2020, aligned with best international practices

2. Complete the As-Is drawings, operational manual, and emergency plans of all structures by December 2020 (85% concluded)

3. Improve our internal and external technical capacity

4. De-characterization of upstream dams and other structures in Brazil

5. Increase dry processing operations, expected to reach 70% of the iron ore production volumes by 2023
Vale’s ESG Portal: transparency for our dam management

Click here to visit.